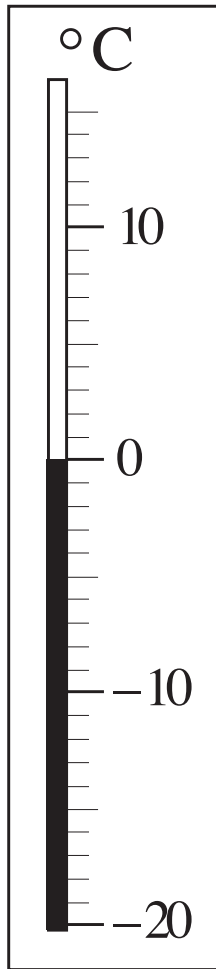
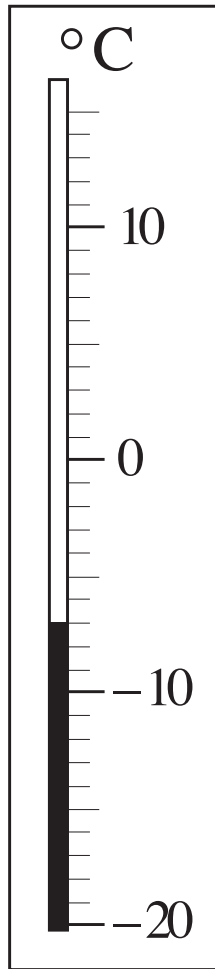


1 sheet per pupil. Ps colour and label appropriately.

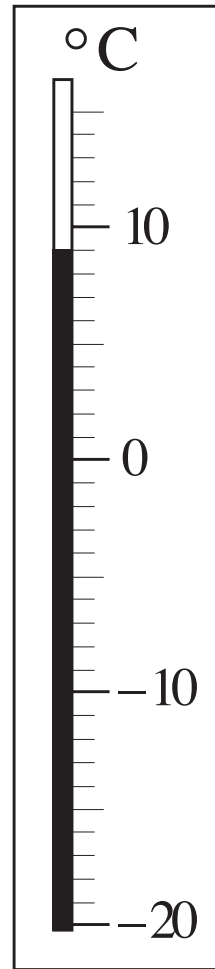
a)


 °C

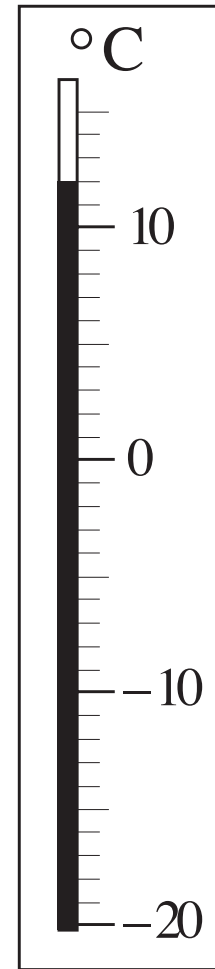
b)


 °C

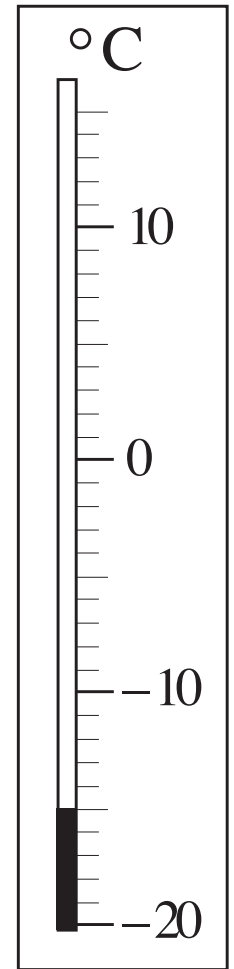
c)


 °C

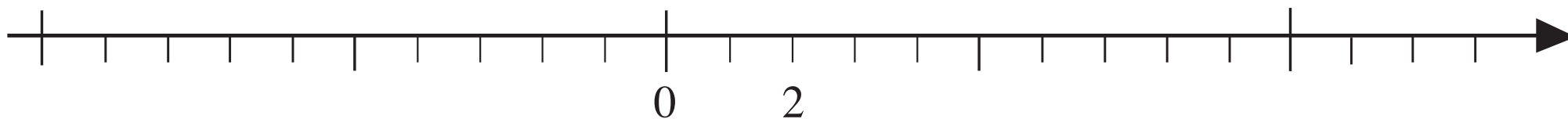
d)


 °C

e)


 °C

a) $-7, +1, 0, 6, -5, -3, +10, 1$



b)

$-7 \bigcirc +1$	$0 \bigcirc -5$	$-5 \bigcirc -7$	$-7 \bigcirc -5$
$-5 \bigcirc 0$	$11 \bigcirc 0$	$6 \bigcirc -3$	$6 \bigcirc +10$
$-7 \bigcirc -3$	$11 \bigcirc 6$	$0 \bigcirc -5$	$-3 \bigcirc +10$



LP 42/1

a)

x	5	-3	2	14		0	-140	479	40.5			-0.72
y	-5	3			8	0		-479		-12.3	$\frac{5}{8}$	

$y =$ $x =$

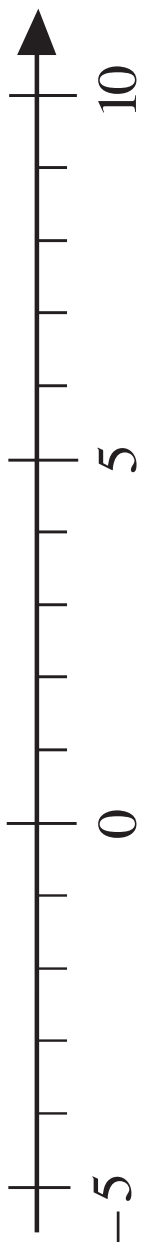
b)

u	6	-11	5	-93	41	164	-2.3	0				-0.15
v	6	11	5						0	10	10	

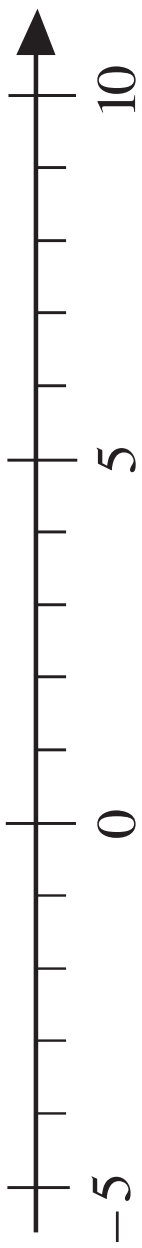
$v =$

LP 42/2

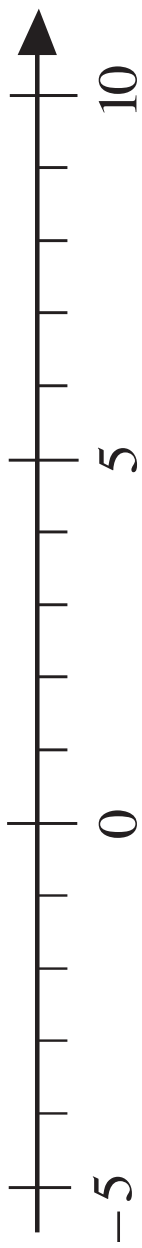
a)



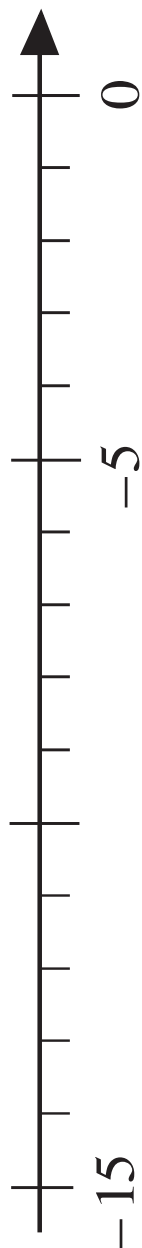
b)



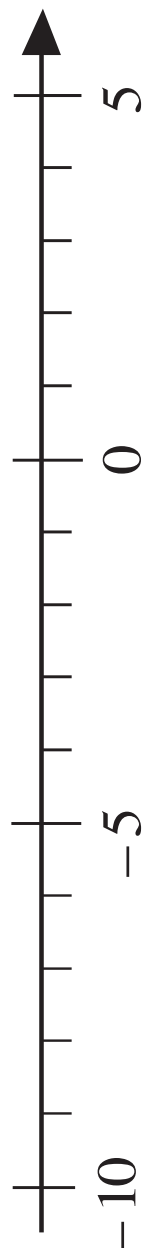
c)



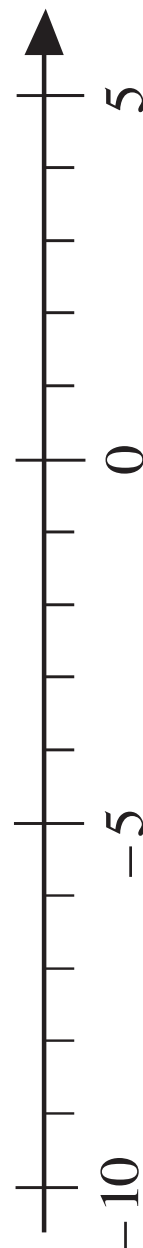
d)

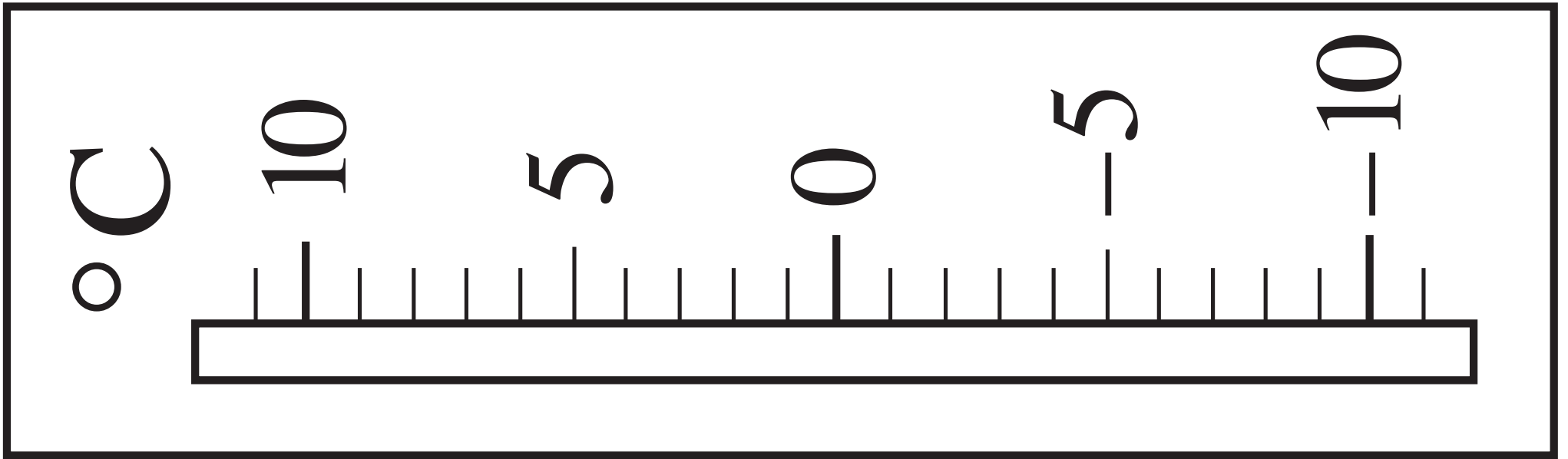


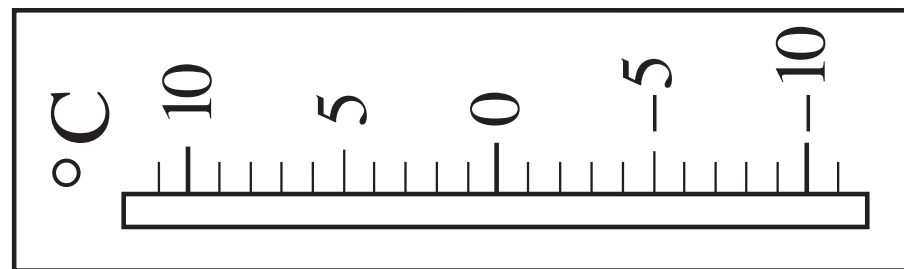
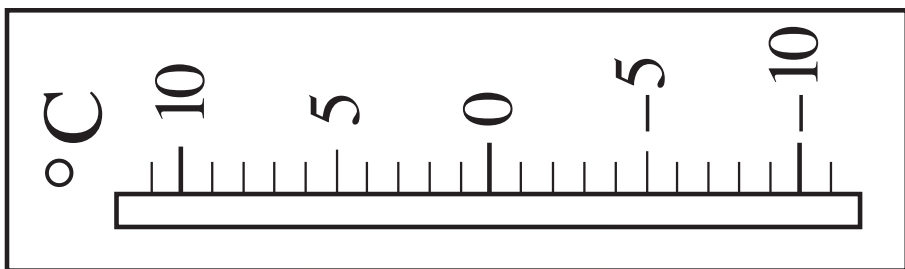
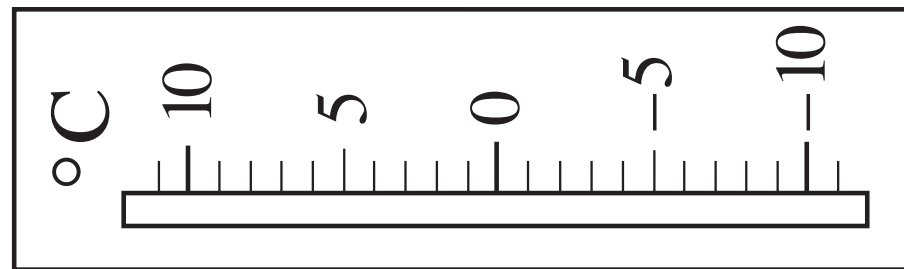
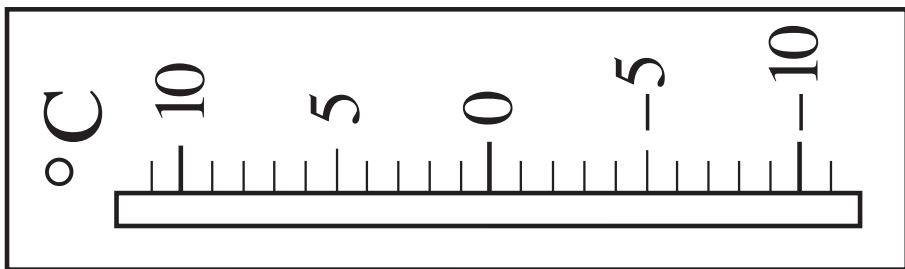
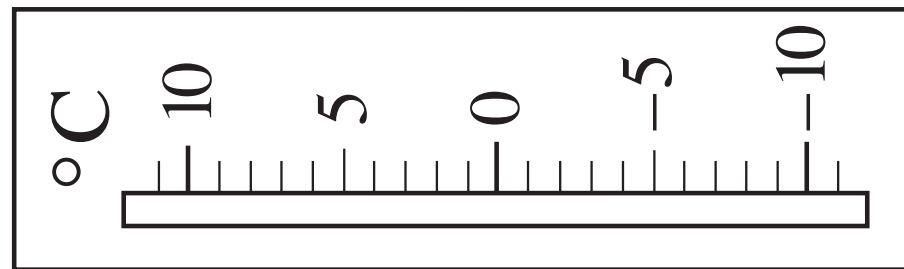
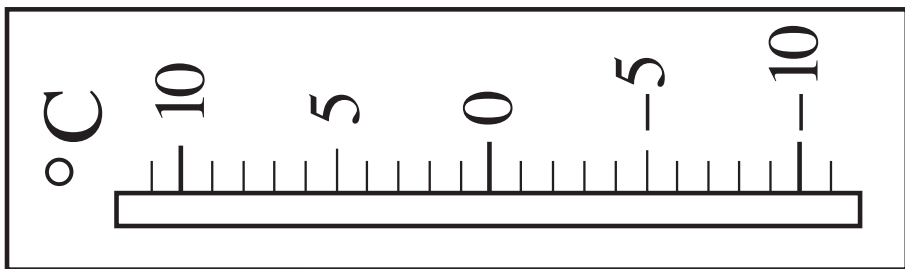
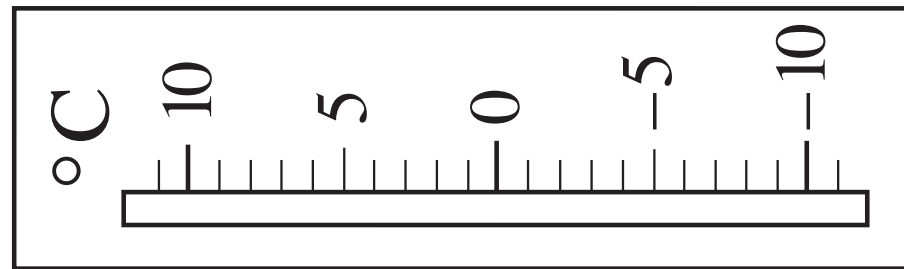
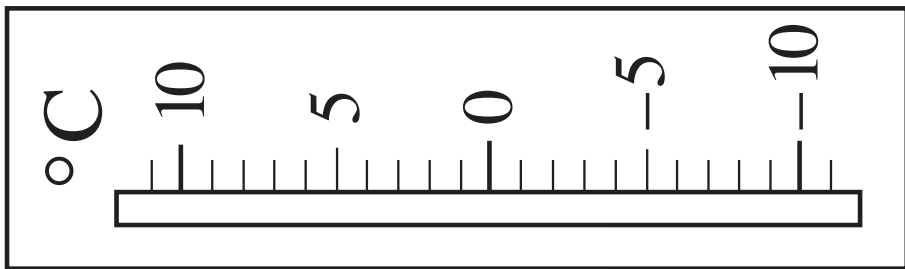
e)



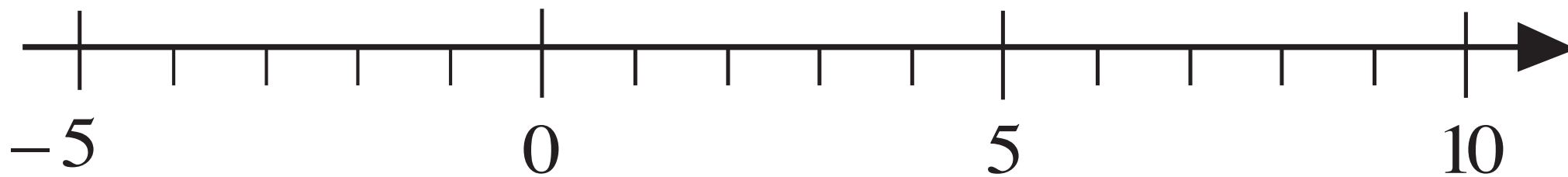
f)



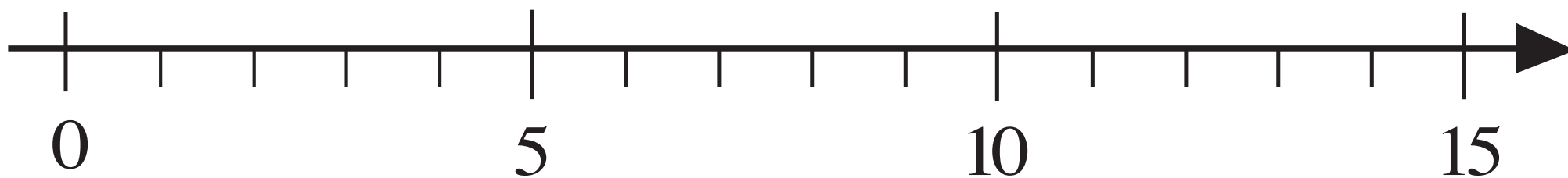


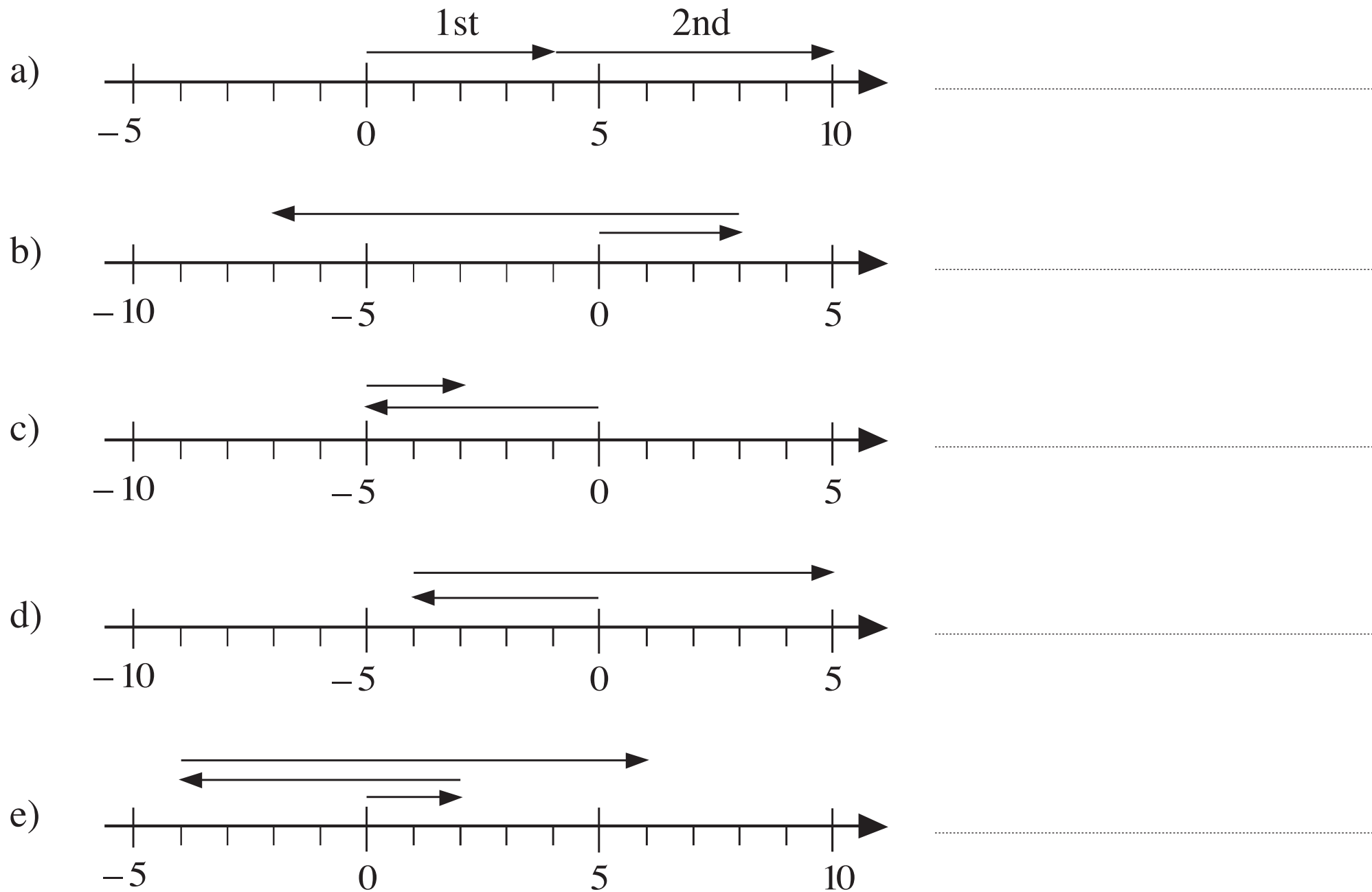


a)

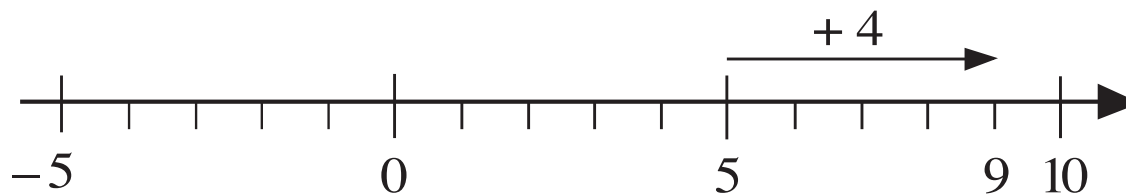


b)





a) $5 + \boxed{} = 9$



b) $-7 + \boxed{} = -9$



c) $\boxed{} + (-3) = -10$



d) $-3 + \boxed{} + (-5) = 2$



e) $5 + (-3) + \boxed{} = 0$



f) $3 + (-5) + \boxed{} = 6$



a)

-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1	1	1	1	1	1	1	-1	-1	-1	-1	

.....

b)

1	1	1	1	1	1	1	1	1	1	1	1
-1	-1	-1	-1	-1	1	1	1				

.....

c)

1	1	1	1	1	1	1					
-1	-1	-1	-1	-1	-1	-1					

.....

LP 43/5

a)

1	1	1	1	1	1	1	1				
						-1	-1	-1			

.....

b)

				1	1	1	1				
-1	-1	-1	-1	-1	-1	-1	-1				

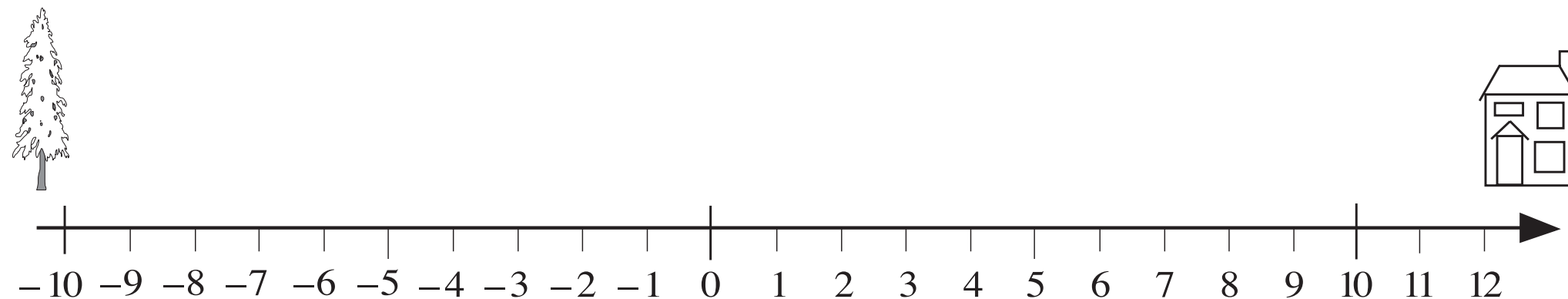
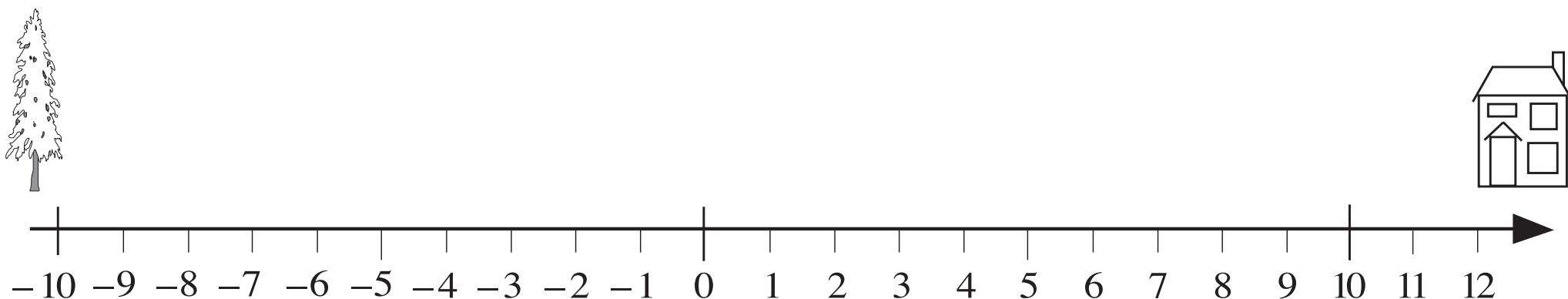
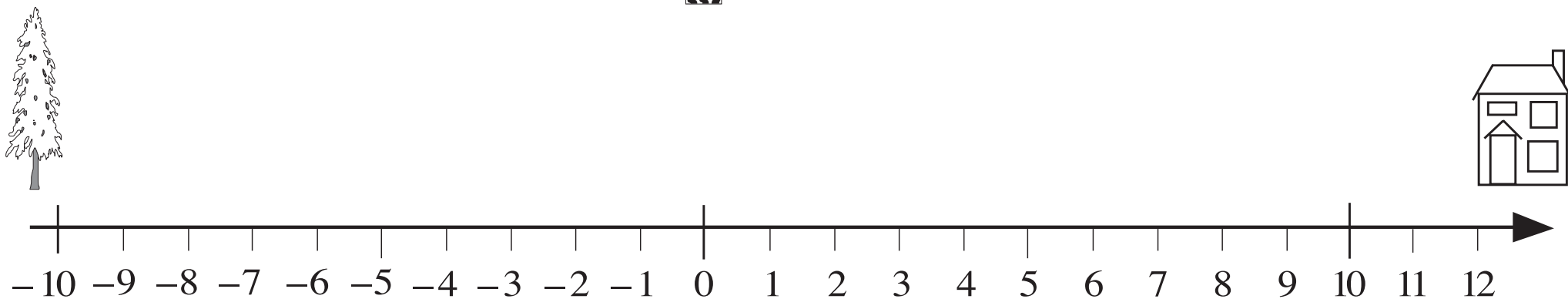
.....

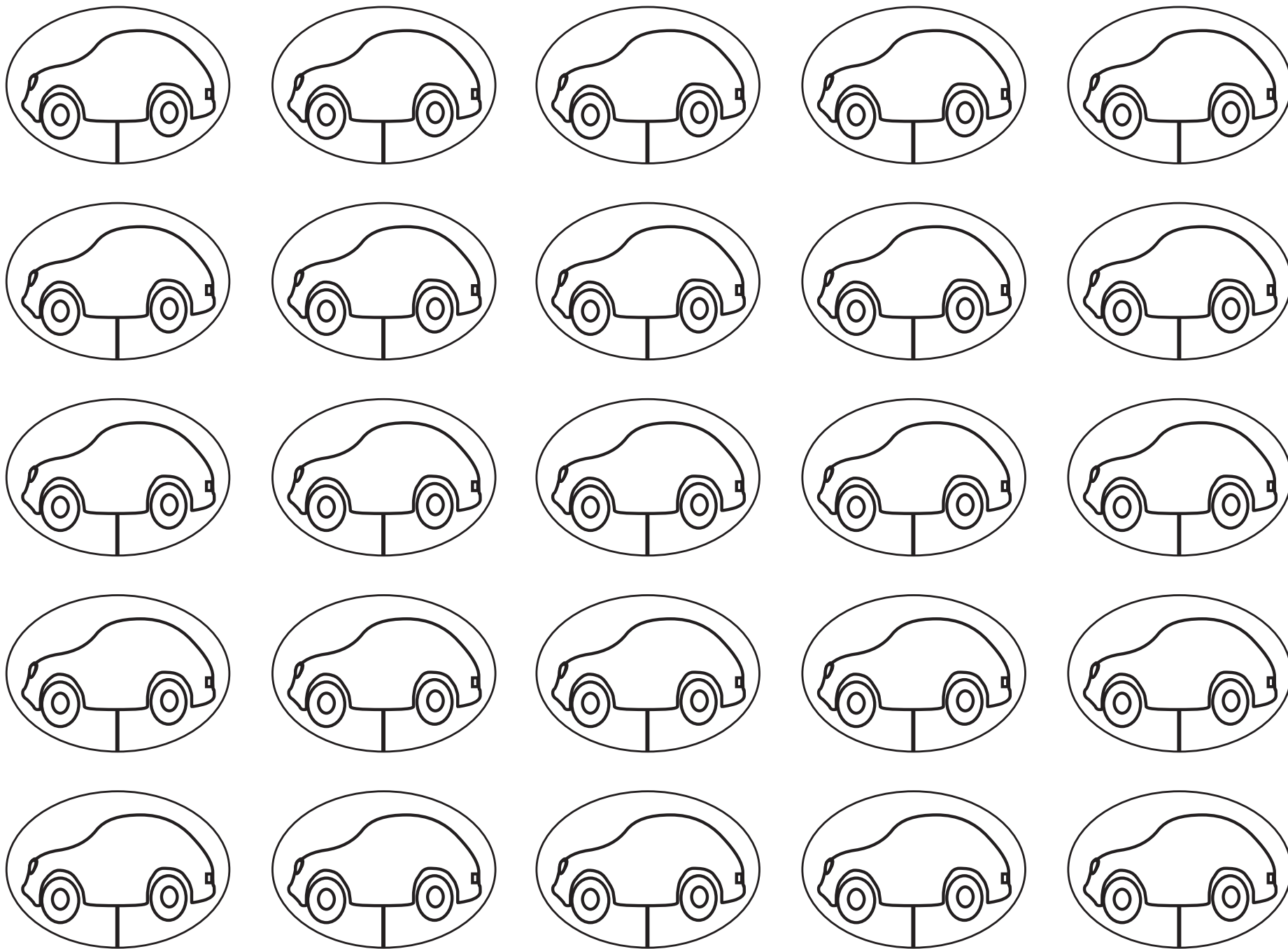
c)

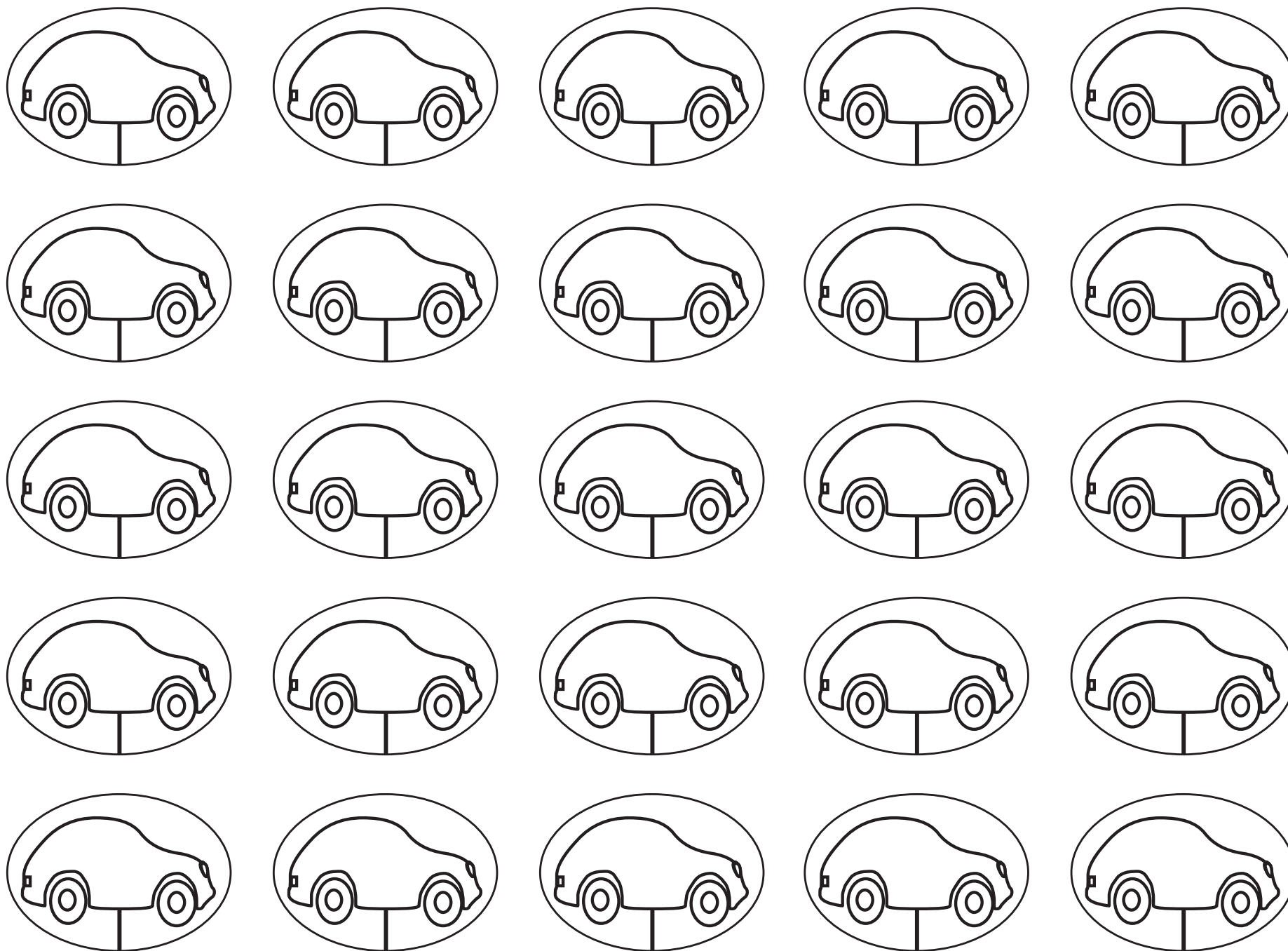
		1	1	1	1						
		-1	-1	-1	-1						

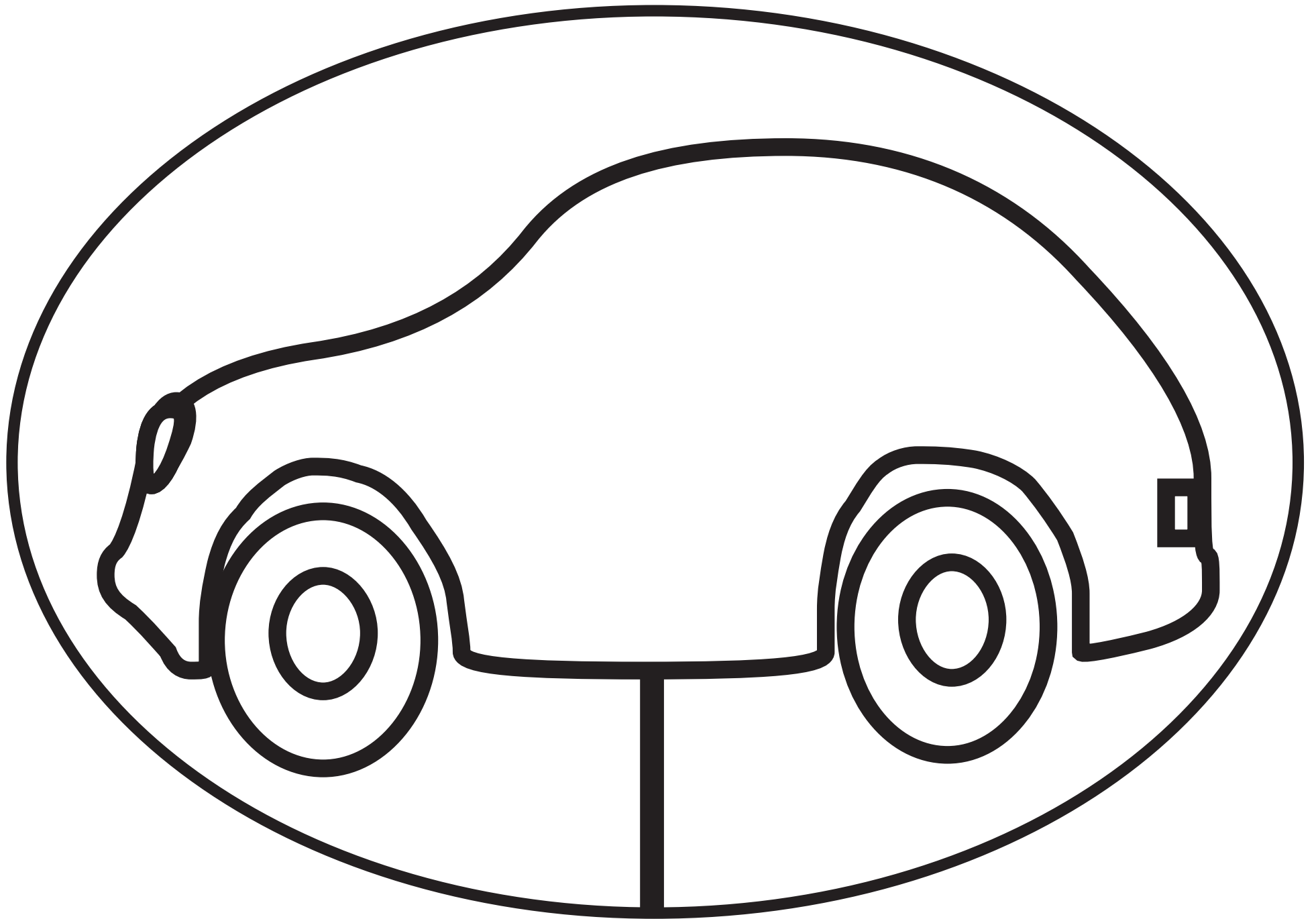
.....

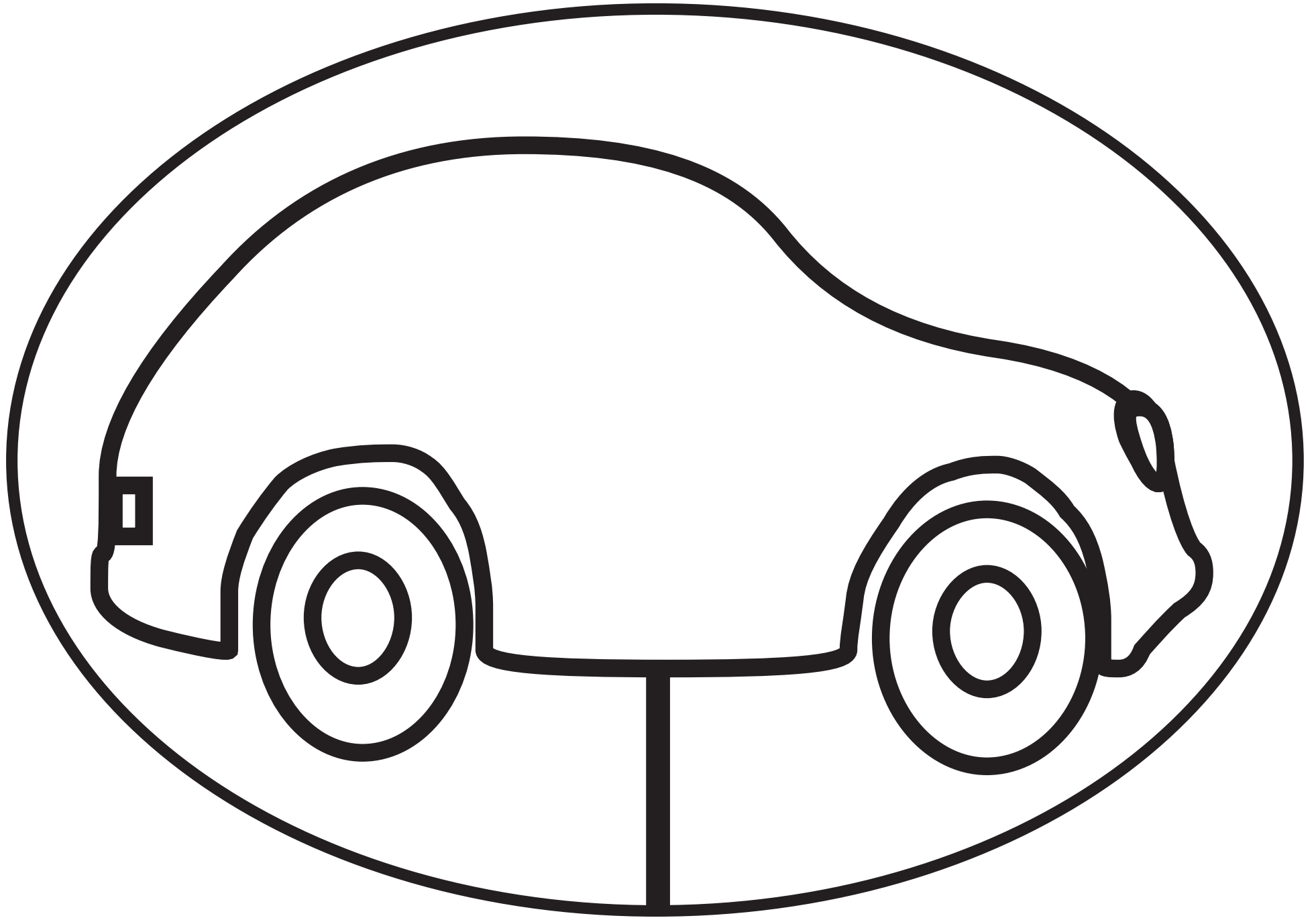
LP 43/6

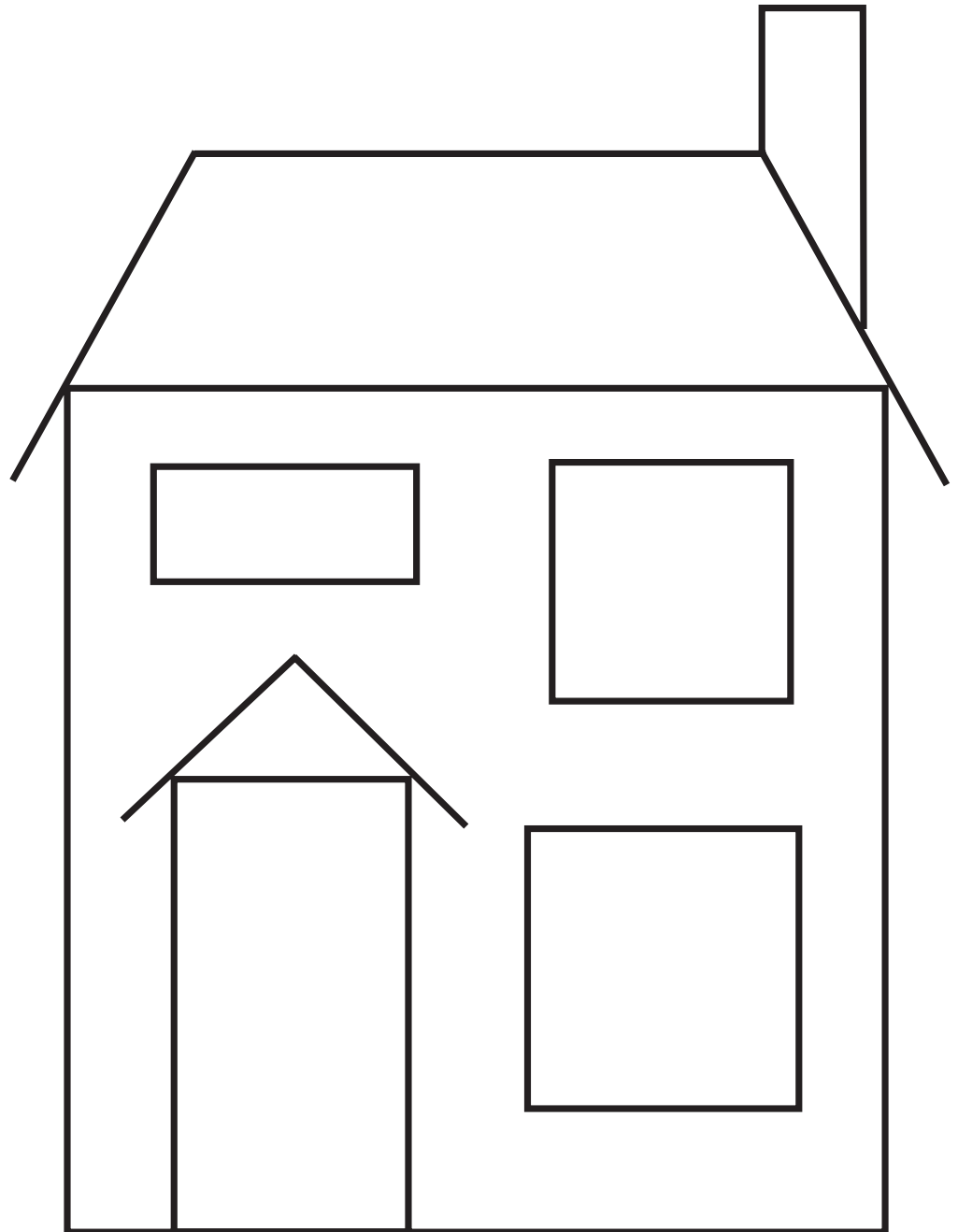
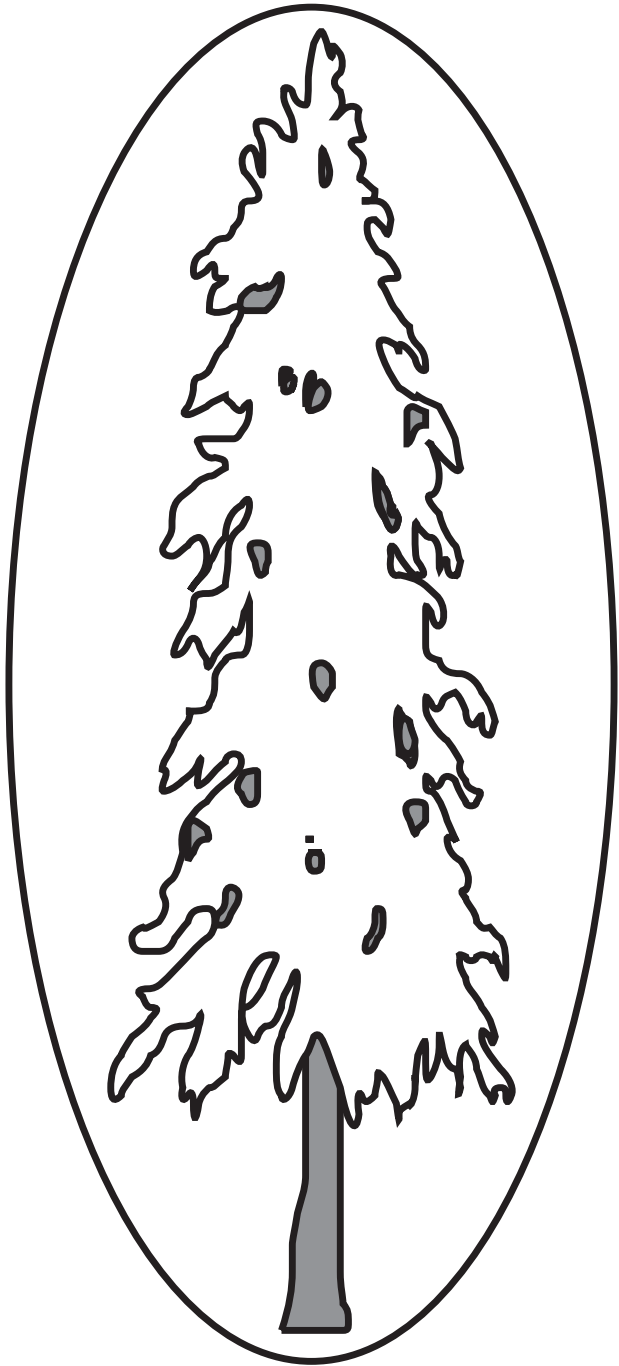


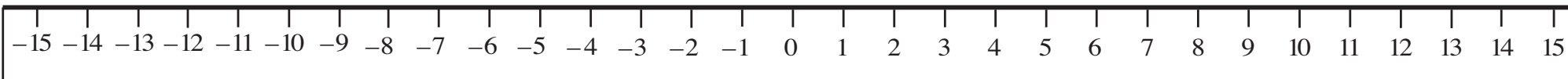
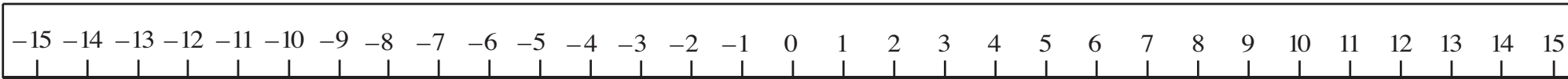
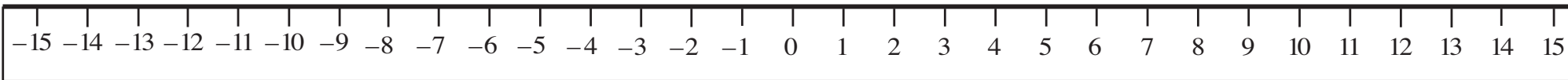
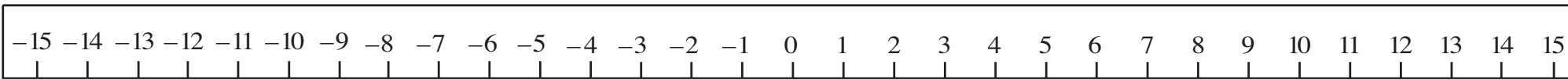
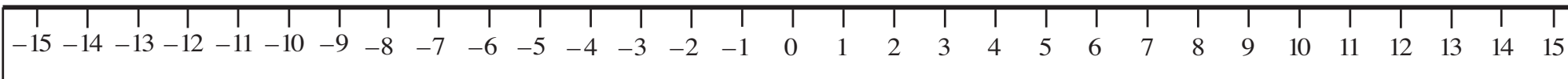
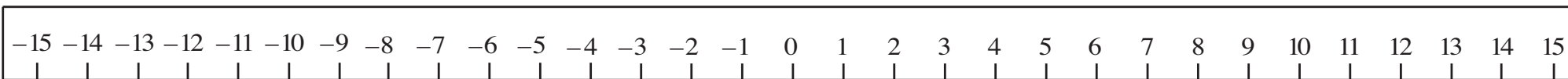
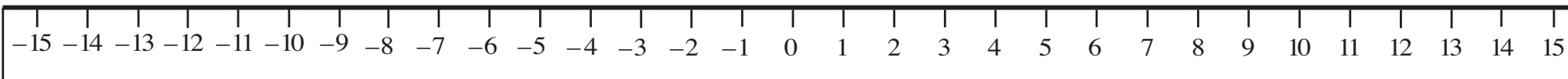
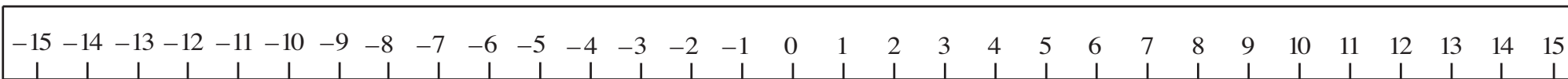
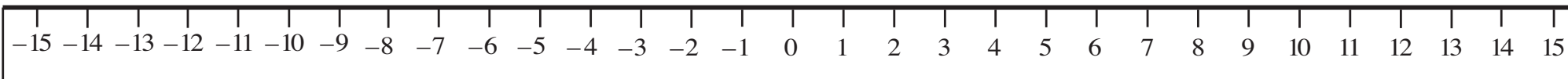
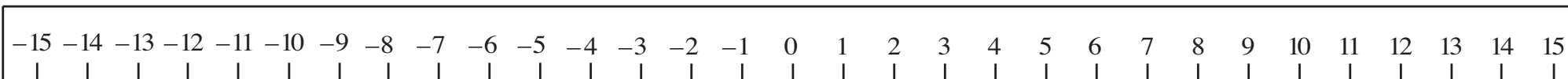




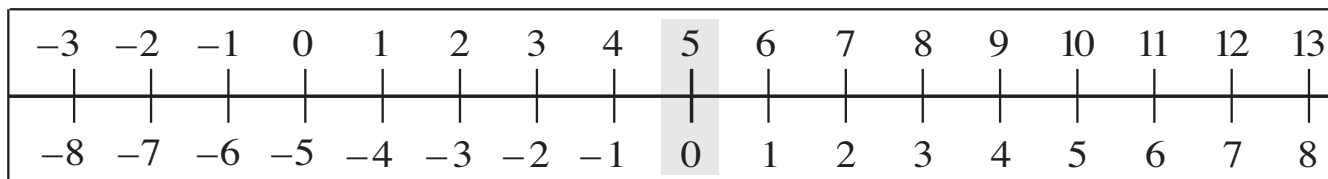








a)



$$(+5) + (+6) = \boxed{11}$$

$$(+5) + (+1) = \boxed{}$$

$$(+5) + (-4) = \boxed{}$$

$$(+5) + (+5) = \boxed{}$$

$$(+5) + 0 = \boxed{}$$

$$(+5) + (-5) = \boxed{}$$

$$(+5) + (+4) = \boxed{}$$

$$(+5) + (-1) = \boxed{}$$

$$(+5) + (-6) = \boxed{}$$

$$(+5) + (+3) = \boxed{}$$

$$(+5) + (-2) = \boxed{}$$

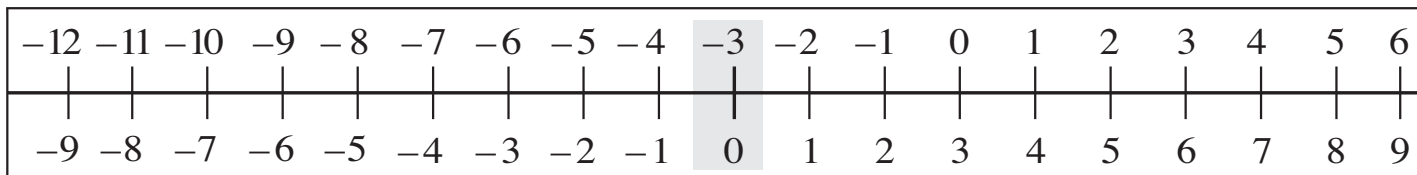
$$(+5) + (-7) = \boxed{}$$

$$(+5) + (+2) = \boxed{}$$

$$(+5) + (-3) = \boxed{}$$

$$(+5) + (-8) = \boxed{}$$

b)



$$(-3) + (+5) = \boxed{}$$

$$(-3) + 0 = \boxed{}$$

$$-3 + (-5) = \boxed{}$$

$$(-3) + (+4) = \boxed{}$$

$$(-3) + (-1) = \boxed{}$$

$$-3 + (-6) = \boxed{}$$

$$(-3) + (+3) = \boxed{}$$

$$(-3) + (-2) = \boxed{}$$

$$-3 + (-7) = \boxed{}$$

$$(-3) + (+2) = \boxed{}$$

$$(-3) + (-3) = \boxed{}$$

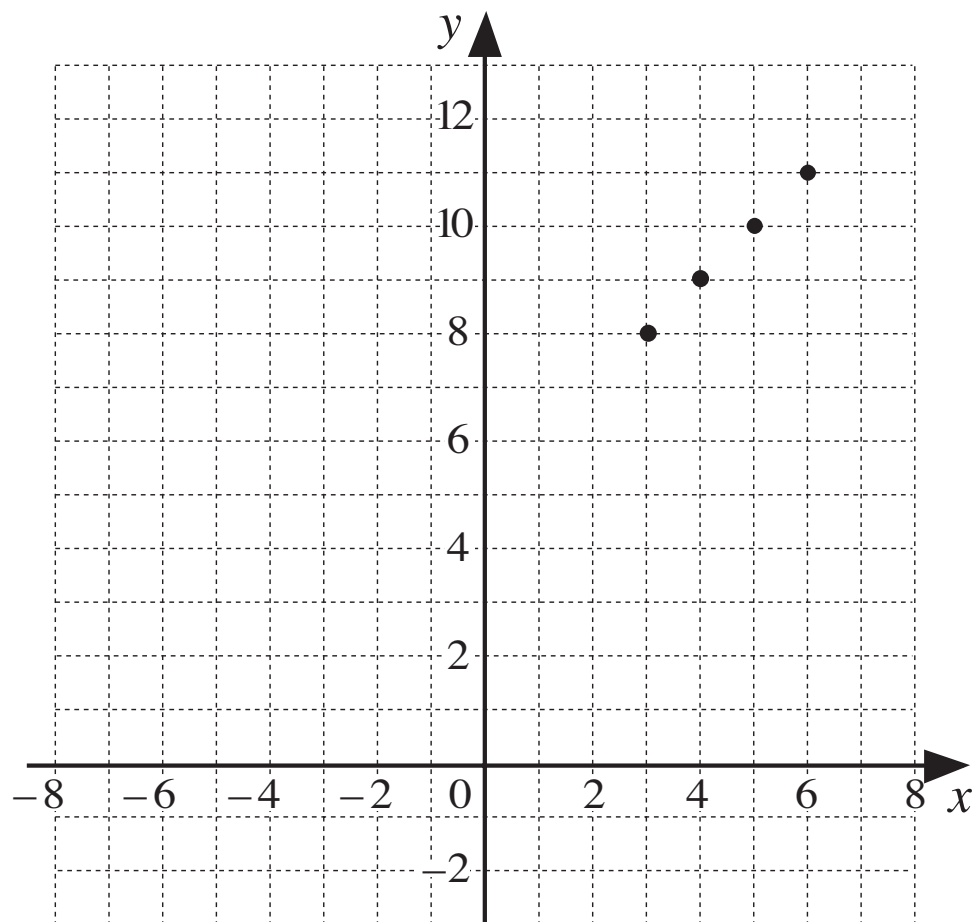
$$-3 + (-8) = \boxed{}$$

$$(-3) + (+1) = \boxed{}$$

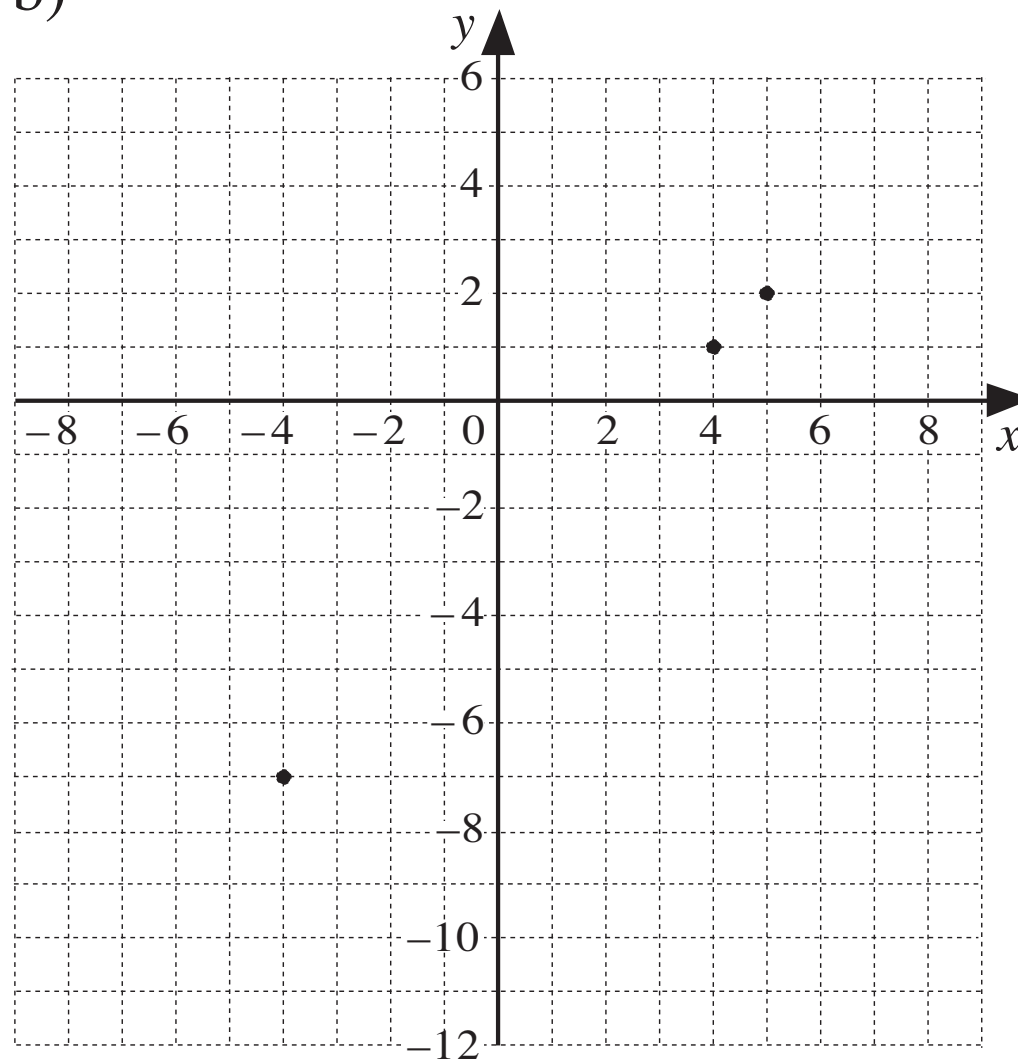
$$(-3) + (-4) = \boxed{-7}$$

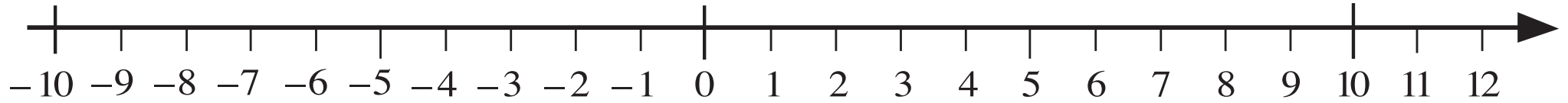
$$-3 + (-9) = \boxed{}$$

a)



b)



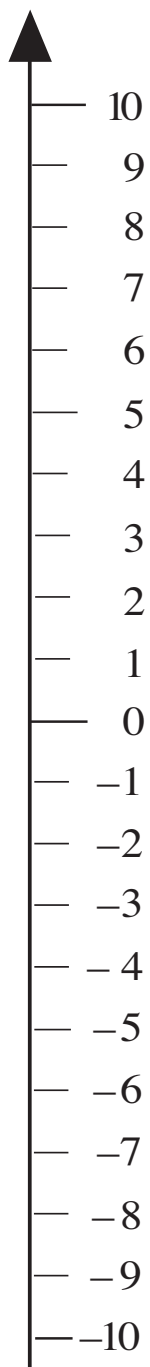


LP 45/5i

subtrahend

reductant

LP 45/5ii



a) 3°C is greater than -6°C by $^{\circ}\text{C}$

So $3 - (-6) = 9$

Check: $9 + (-6) = 3$

b) -6°C is less than 3°C by $^{\circ}\text{C}$

So

Check:

c) 4 is less than 7 by

So

Check:

d) 7 is greater than 4 by

So

Check:

e) -8 is less than -2 by

So

Check:

f) -2 is greater than -8 by

So

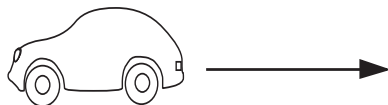
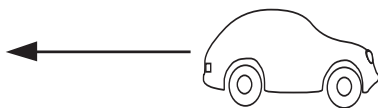
Check:

- a) Sue's starting balance was £2, as she had £5 in cash and was in debt. Then she spent £5.
How much is her balance now?
- b) Rob's starting balance was – £3, as he had in cash and was £5 in debt. Then he spent £2.
How much is his new balance?
- c) Billy's starting balance was – £3, as he had £1 in cash and was in debt. Then £4 of his debts were cancelled.
How much is his balance now?
- d) Mary's starting balance was , as she had £5 in cash and was £3 in debt. Then £3 of her debts were repaid.
What is her balance now?

a) $(+8) - (+2) =$

c) $(+2) - (+8) =$

e) $(+4) - (+3) =$

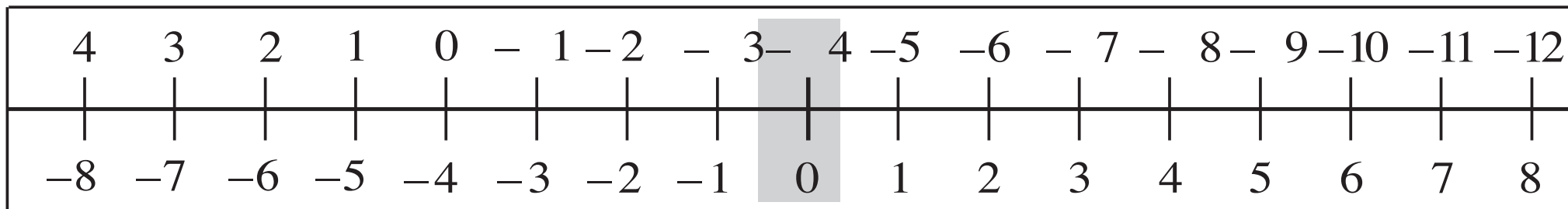


b) $(-8) - (-2) =$

d) $(-2) - (-8) =$

f) $(-4) - (-3) =$

LP 47/8



LP 48/3

a) $(+3) + (-1) =$

b) $(+3) + (-5) =$

c) $(+3) + (+2) =$

d) $(+3) + 0 =$

e) $(-4) + (+1) =$

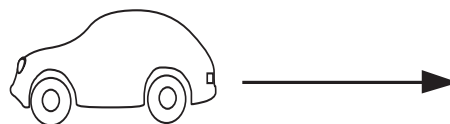
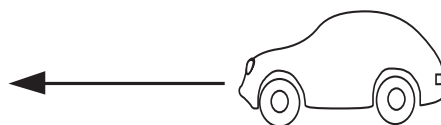
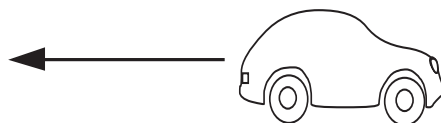
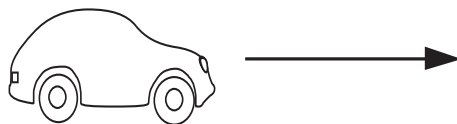
f) $(-4) + (+6) =$

g) $(-4) + (-3) =$

h) $(-4) + 0 =$

i) $0 + (+2) =$

j) $0 + (-3) =$



k) $(+3) - (+1) =$

l) $(+3) - (+5) =$

m) $(+3) - (-2) =$

n) $(+3) - 0 =$

o) $(-4) - (-1) =$

p) $(-4) - (-6) =$

q) $(-4) - (+3) =$

r) $(-4) - 0 =$

s) $0 - (-2) =$

t) $0 - (+3) =$

a)

a	8	7	6			3	2				-2	-3	-4
b	5	4		2	1			-2	-3	-4			

Rule:

b)

x	5	-1	2	0		7		3	-40		8		
y	-2	4	1		-3		100			11		6	8.5

Rule:

a)

$$(+4) - (+6) = \boxed{}$$

$$(+4) - (+5) = \boxed{}$$

$$(+4) - (+4) = 0$$

$$(+4) - (+3) = +1$$

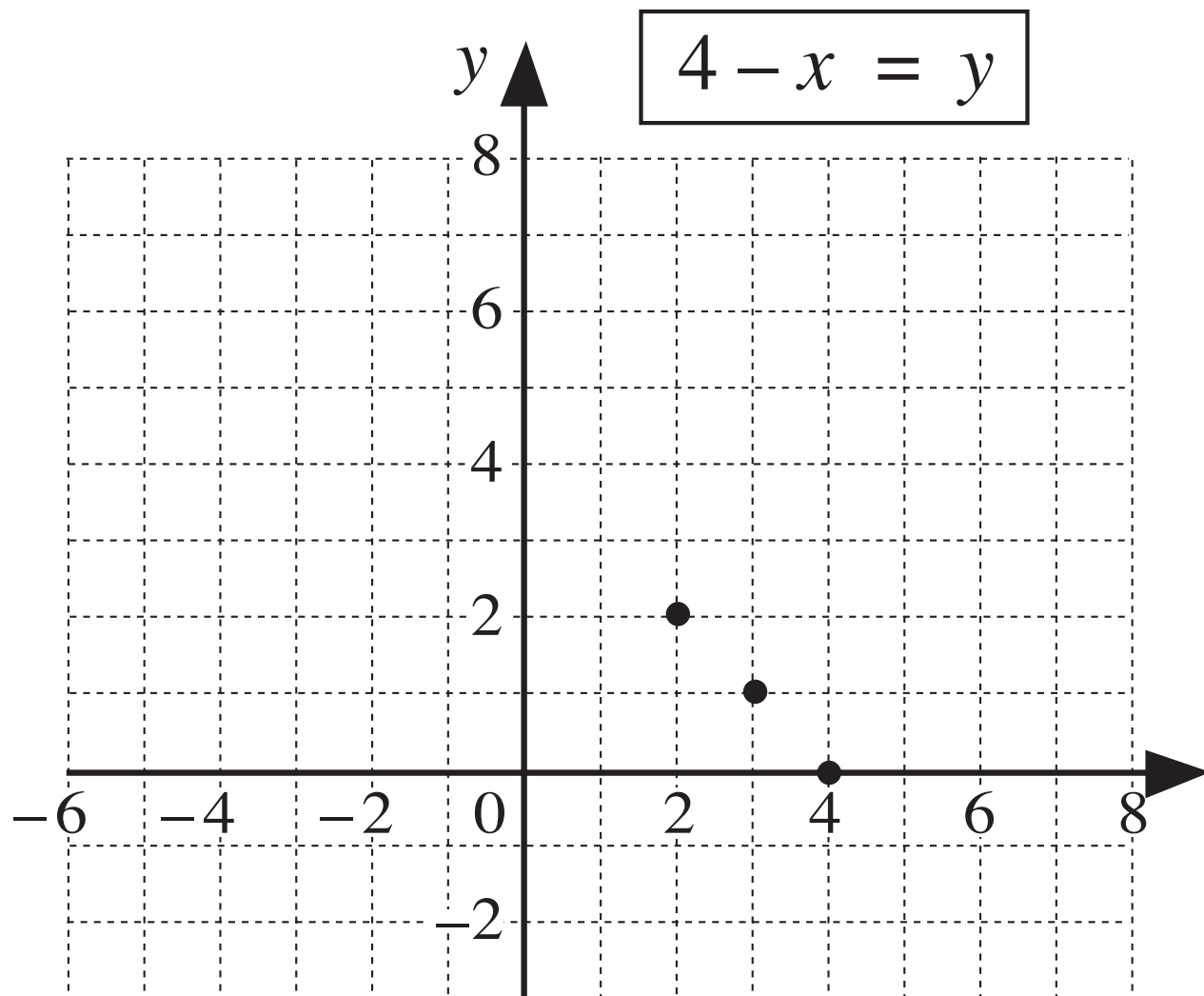
$$(+4) - (+2) = +2$$

$$(+4) - (+1) = +3$$

$$(+4) - 0 = +4$$

$$(+4) - (-1) = \boxed{}$$

$$(+4) - (-2) = \boxed{}$$



b)

$$(-4) - (+2) = \boxed{}$$

$$(-4) - (+1) = \boxed{}$$

$$(-4) - 0 = -4$$

$$(-4) - (-1) = -3$$

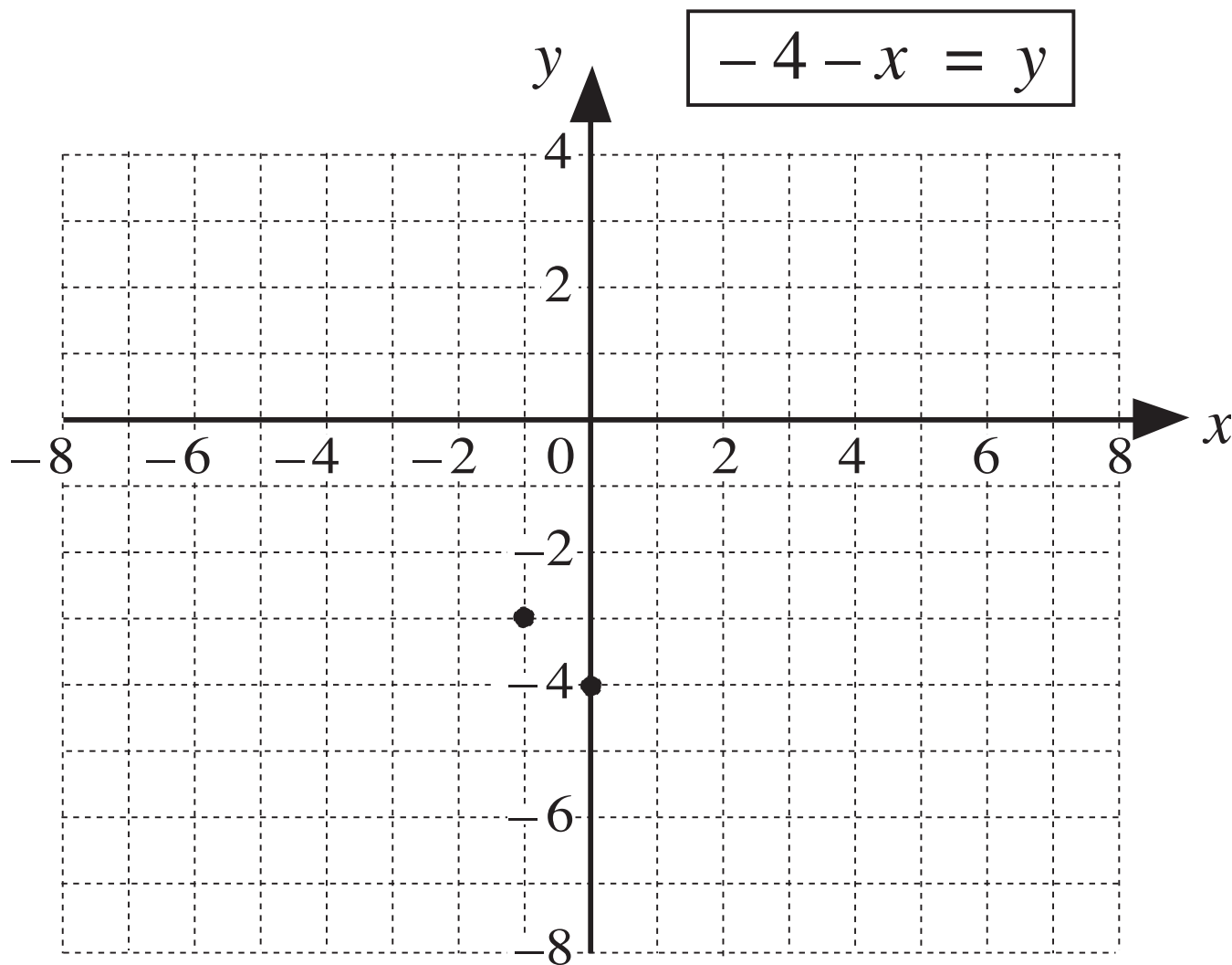
$$(-4) - (-2) = -2$$

$$(-4) - (-3) = \boxed{}$$

$$(-4) - (-4) = 0$$

$$(-4) - (-5) = \boxed{}$$

$$(-4) - (-6) = \boxed{}$$



a)

$$(+3) + (-5) =$$

$$(+3) + (-4) =$$

$$(+3) + (-3) =$$

$$(+3) + (-2) =$$

$$(+3) + (-1) =$$

$$(+3) + 0 =$$

$$(+3) + (+1) =$$

$$(+3) + (+2) =$$

$$(+3) - (+5) =$$

$$(+3) - (+4) =$$

$$(+3) - (+3) =$$

$$(+3) - (+2) =$$

$$(+3) - (+1) =$$

$$(+3) - 0 =$$

$$(+3) - (-1) =$$

$$(+3) - (-2) =$$

b)

$$(-3) + (-2) =$$

$$(-3) + (-1) =$$

$$(-3) + 0 =$$

$$(-3) + (+1) =$$

$$(-3) + (+2) =$$

$$(-3) + (+3) =$$

$$(-3) + (+4) =$$

$$(-3) + (+5) =$$

$$(-3) - (+2) =$$

$$(-3) - (+1) =$$

$$(-3) - 0 =$$

$$(-3) - (-1) =$$

$$(-3) - (-2) =$$

$$(-3) - (-3) =$$

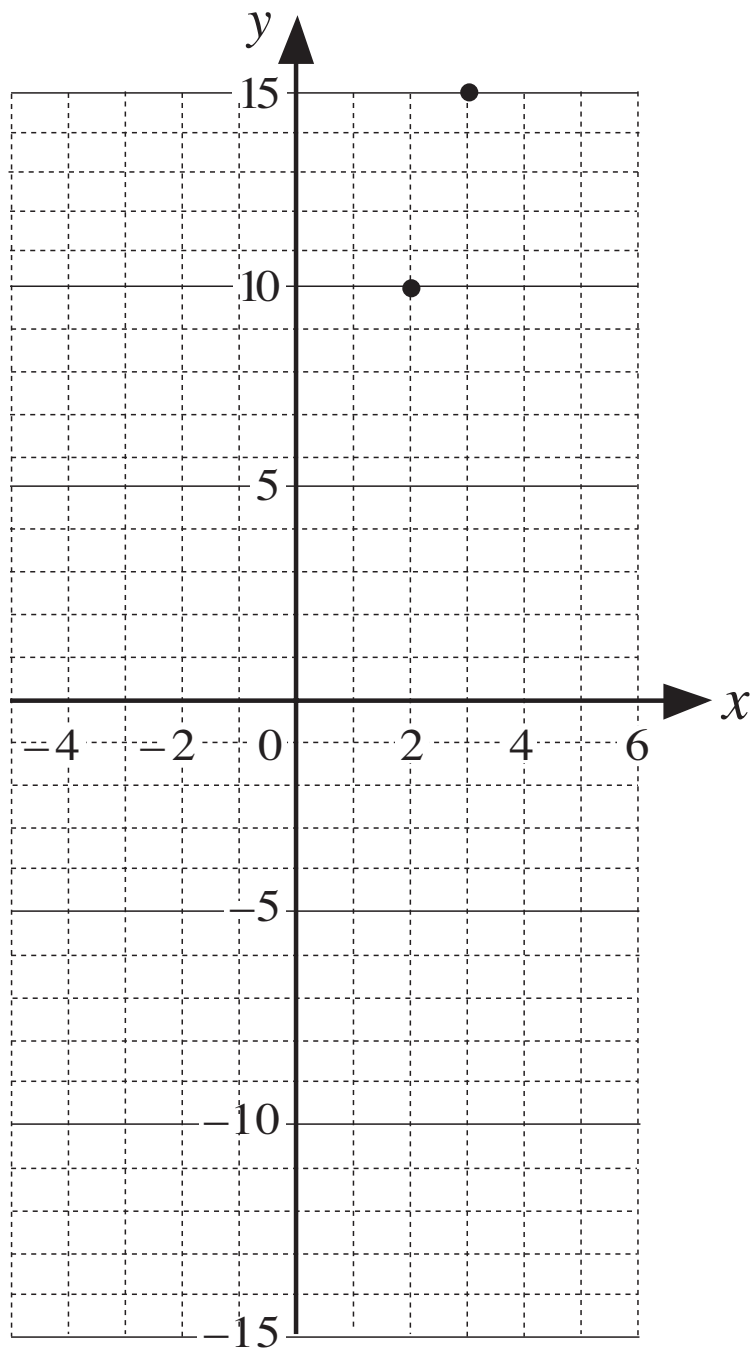
$$(-3) - (-4) =$$

$$(-3) - (-5) =$$



H Th	T Th	Th	H	T	U

$$\begin{aligned}
 5 \times 3 &= \boxed{} \\
 5 \times 2 &= \boxed{} \\
 5 \times 1 &= \boxed{} \\
 5 \times 0 &= \boxed{} \\
 5 \times (-1) &= \boxed{} \\
 5 \times (-2) &= \boxed{} \\
 5 \times (-3) &= \boxed{}
 \end{aligned}$$



$$5 \times x = y$$

$$9 \div 3 = \boxed{}$$

$$6 \div 3 = \boxed{}$$

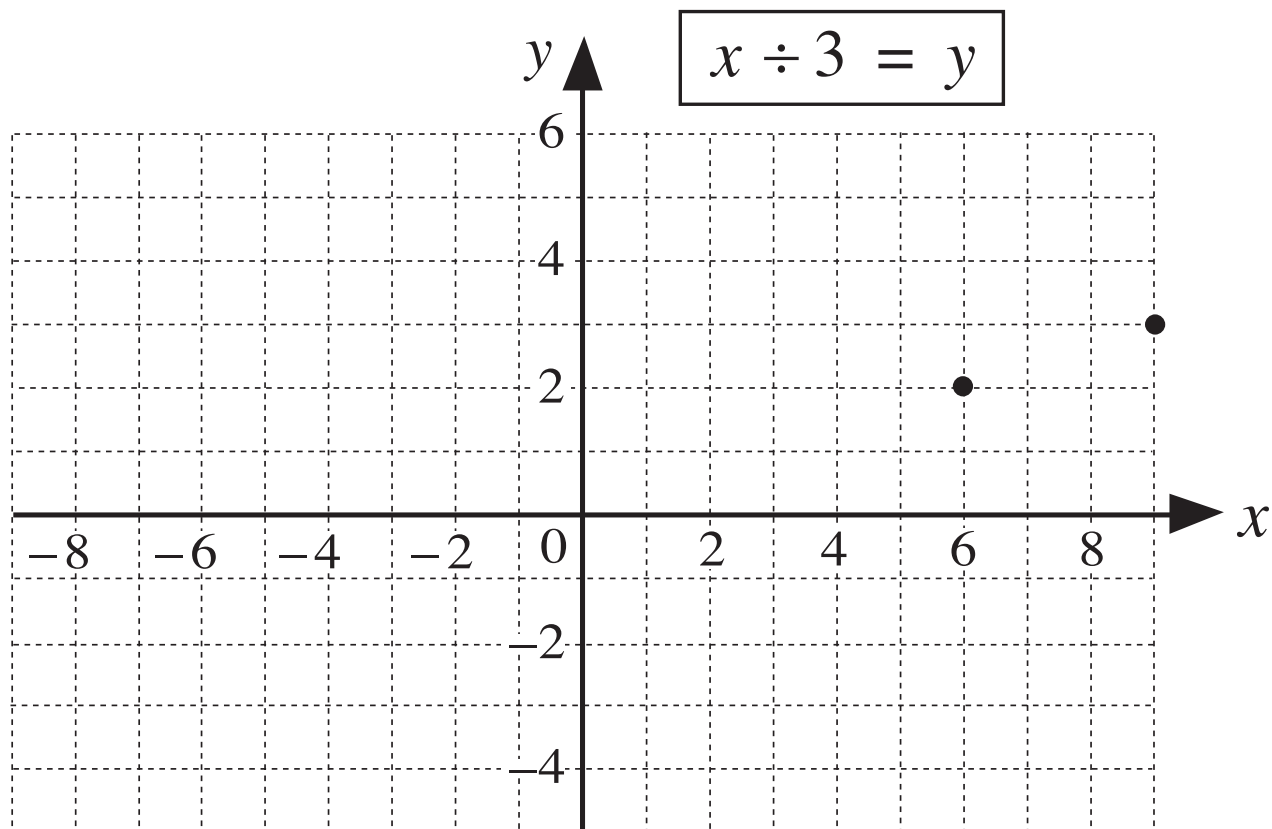
$$3 \div 3 = \boxed{}$$

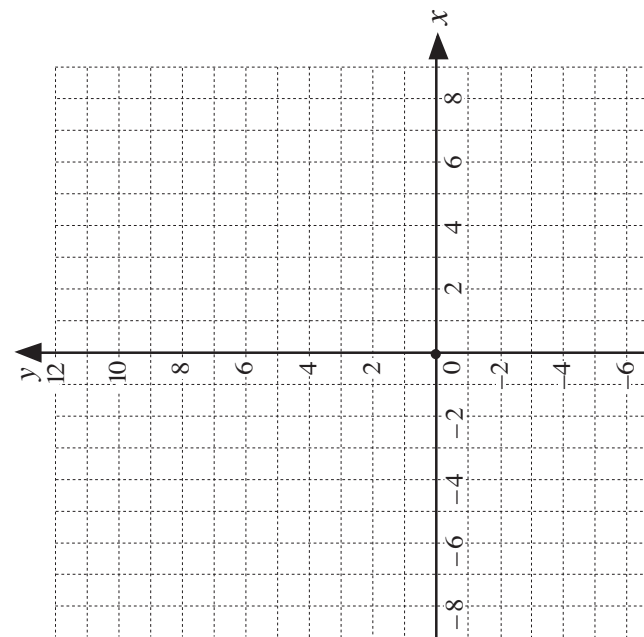
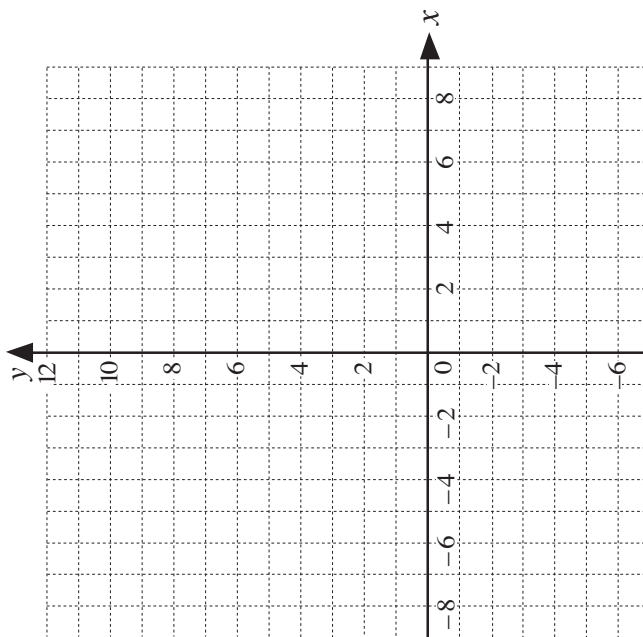
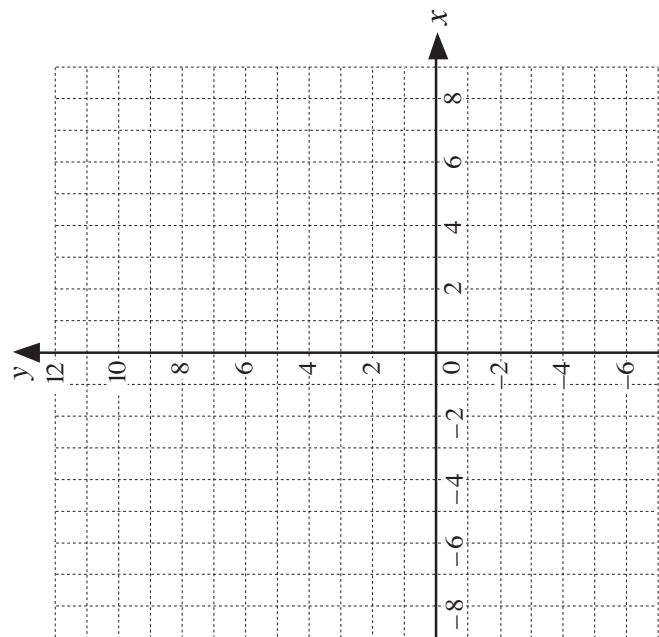
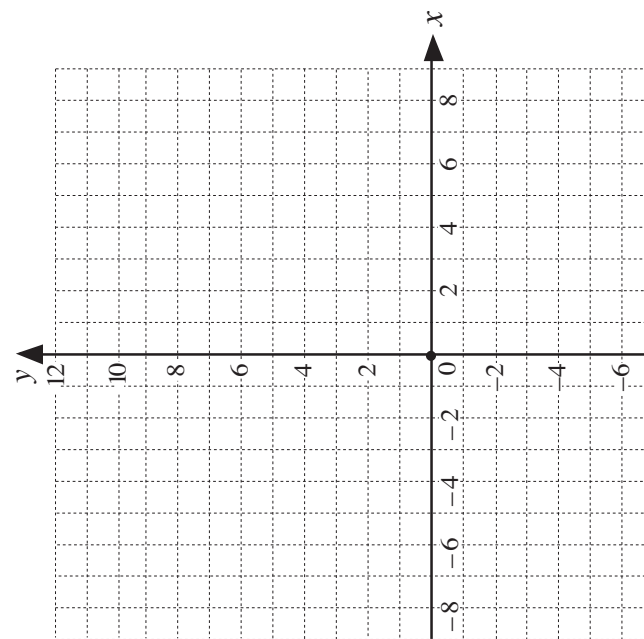
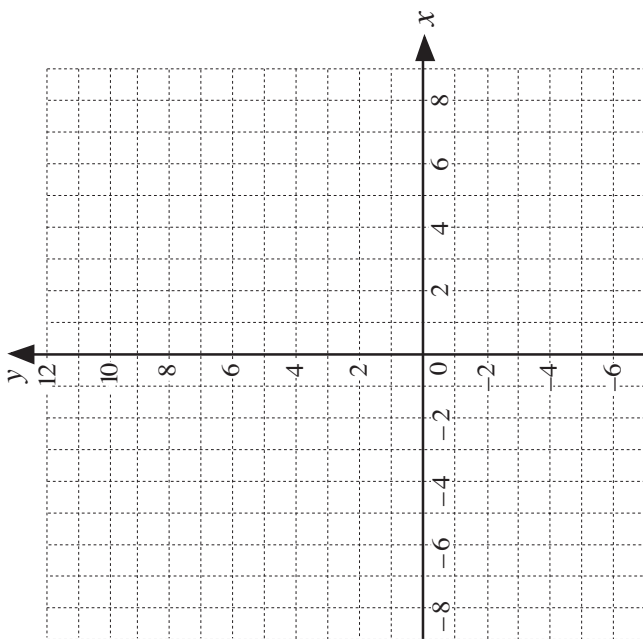
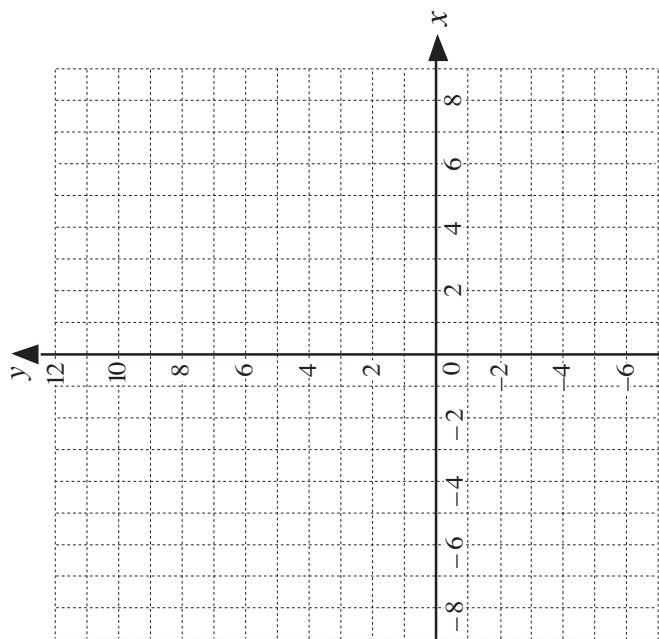
$$0 \div 3 = \boxed{}$$

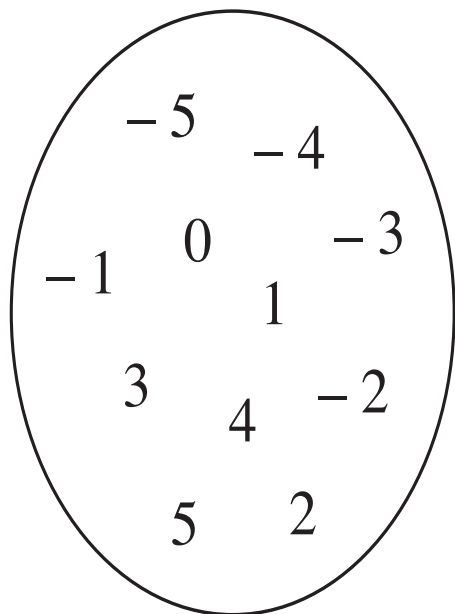
$$-3 \div 3 = \boxed{}$$

$$-6 \div 3 = \boxed{}$$

$$-9 \div 3 = \boxed{}$$







Statement	Numbers which make it true	Numbers which make it false
$5 - \square = 8$		
$6 + \square = 1$		
$\square < 3$		
$5 - \square > 6$		
$4 + \square \leq 8$		

a) $-4 - \square = -18$
 $\square : \dots\dots\dots$

b) $-\bigcirc < 1$
 $\bigcirc : \dots\dots\dots$

c) $13 + \triangle = -10$
 $\triangle = \dots\dots\dots$

d) $-3 - \square \leq -15$
 $\square : \dots\dots\dots$

e) $10 - \bigcirc = 15$
 $\bigcirc = \dots\dots\dots$

f) $\triangle - (-2) > 5$
 $\triangle : \dots\dots\dots$

g) $\square + (-3) = -5$
 $\square = \dots\dots\dots$

h) $-8 - \bigcap > -1$
 $\bigcap : \dots\dots\dots$

i) $-10 + (-x) = -11$
 $x = \dots\dots\dots$

a) $\square \times 6 \geq -18$

b) $+8 \times \bigcirc \leq 0$

c) $\triangle \times 4 = \triangle + (-12)$

$\square : \dots\dots\dots$

$\bigcirc : \dots\dots\dots$

$\triangle = \dots\dots\dots$

d) $\frac{-24}{\square} \div \square = -6$

e) $\frac{\bigcirc}{-} \div 5 = -3$

f) $(-5) + \triangle < +6$

$\square = \dots\dots\dots$

$\bigcirc = \dots\dots\dots$

$\triangle : \dots\dots\dots$

a)

x	4	− 1	0	17	− 29			− 1024	+ 12		
y	− 4	1	0	− 17		165	− 40			+ 309	4

$y =$

$x =$

b)

a	5	− 4	+ 11	0	+ 105	− 48			+ 2183	− 536
b	5	4	+ 11	0			+ 382	+ 382		

$b =$

a) $13 - \square > 10$

\square :

b) $-10 + (-\bigcirc) < -11$

\bigcirc :

c) $\triangle \div 5 = -7$

$\triangle =$

d) $(-4) \times \square > -24$

\square :

e) $-12 + 2 \times \bigcirc = -16$

$\bigcirc =$

f) $\triangle \div (+3) = -6$

$\triangle =$

LP 52/11

x	$+3$	$+5$	-1	0	$+8$			
y	$+1$	-1				$+9$		

LP 52/12i

a) $6 + 8 =$

b) $24 + 5 =$

c) $32 + 19 =$

d) $250 + 190 =$

e) $13 - 8 =$

f) $26 - 12 =$

g) $54 - 18 =$

h) $350 - 140 =$

i) $6 \times 7 =$

j) $14 \times 5 =$

k) $6 \times 90 =$

l) $18 \times 100 =$

m) $30 \div 5 =$

n) $42 \div 7 =$

o) $150 \div 10 =$

p) $250 \div 10 =$

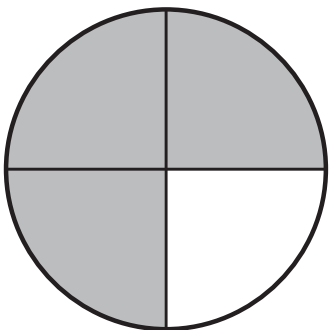


LP 53/6

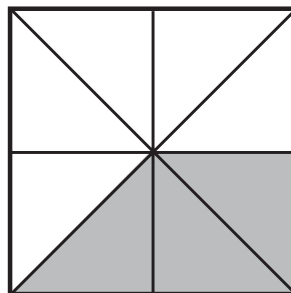
x	7	8	9	5		6	7	10	6	0
y	3	2	5	8	9		7		11	30
z	22	17	46		82	61		81		

LP 53/9

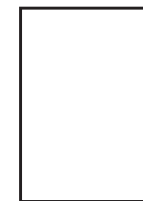
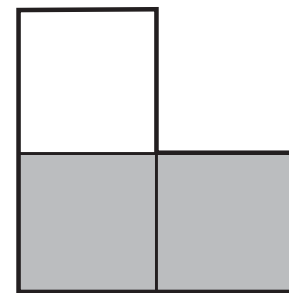
a) 1 unit



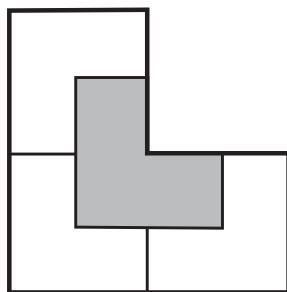
b) 1 unit



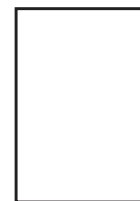
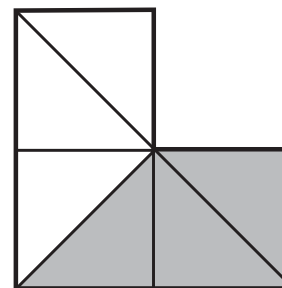
c) 1 unit



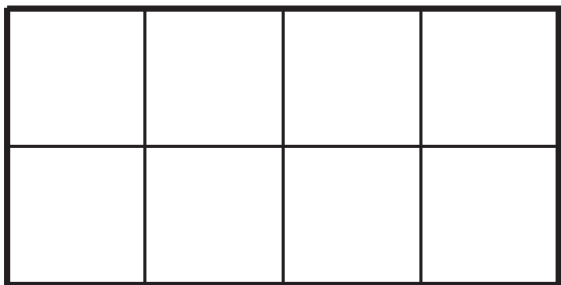
d) 1 unit



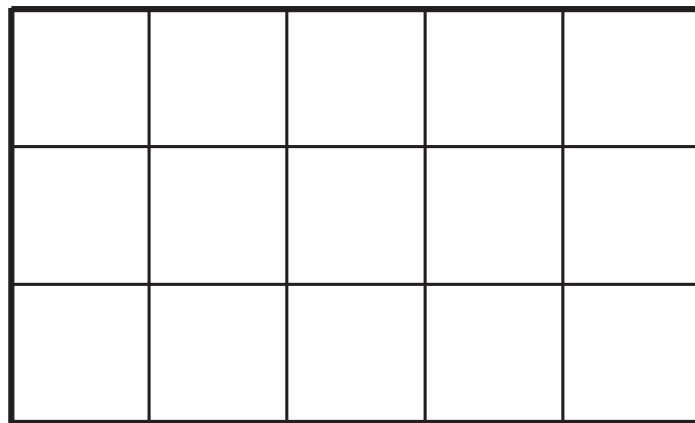
e) 1 unit



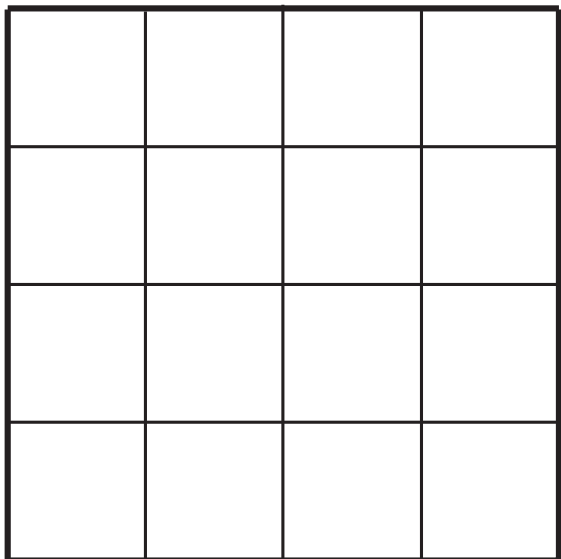
a)



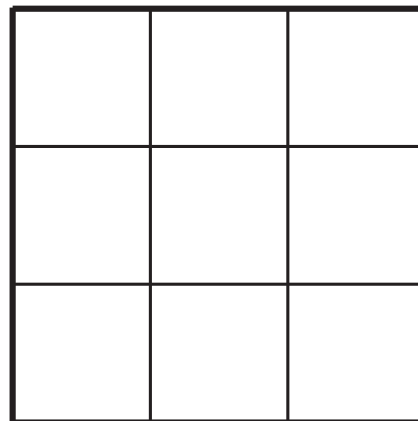
b)

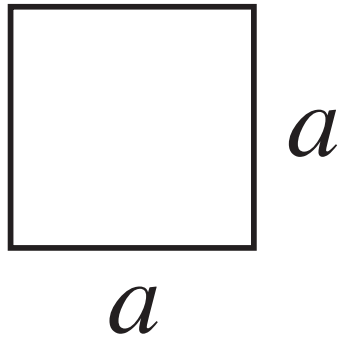
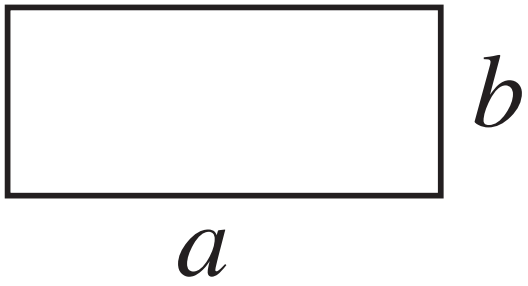


c)

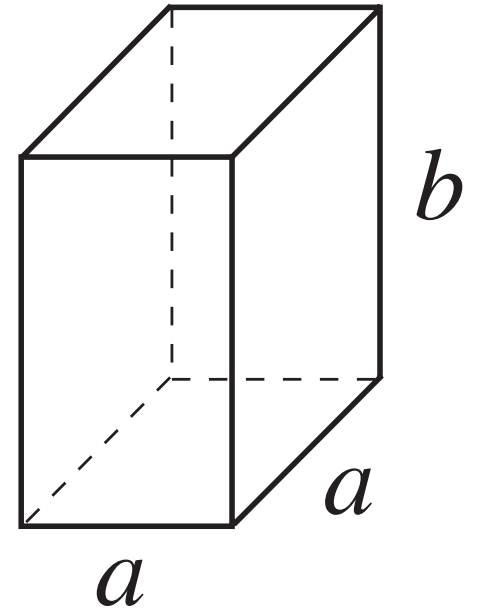
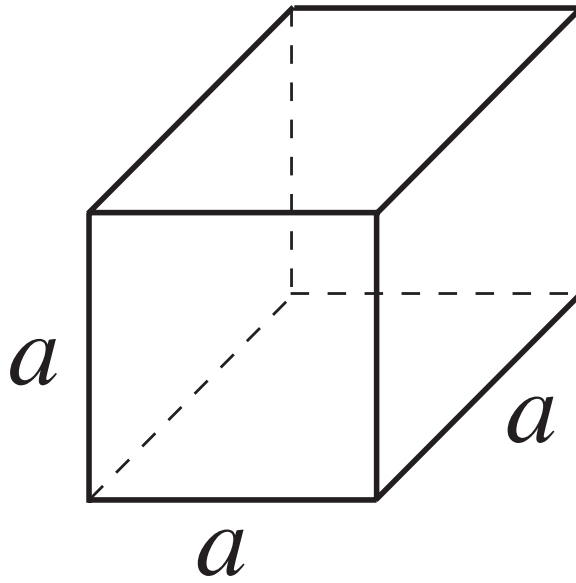
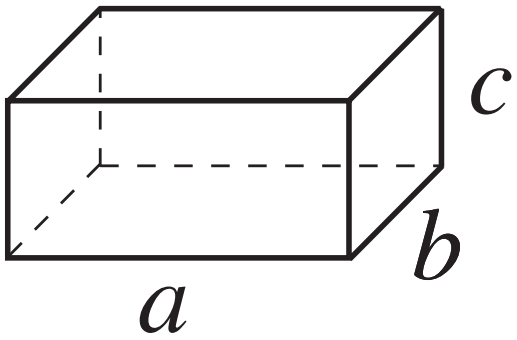


d)






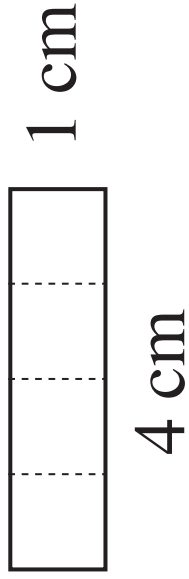
.....



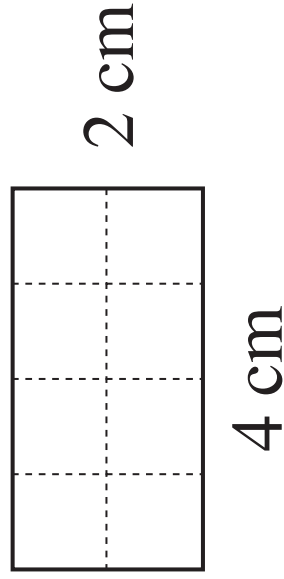
.....

Unit of area:  1 cm = 1 cm²
1 cm

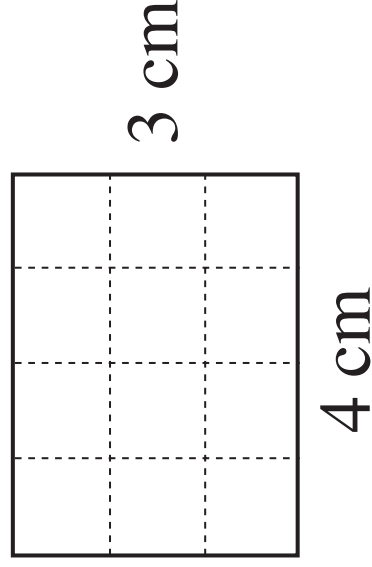
①



②



③

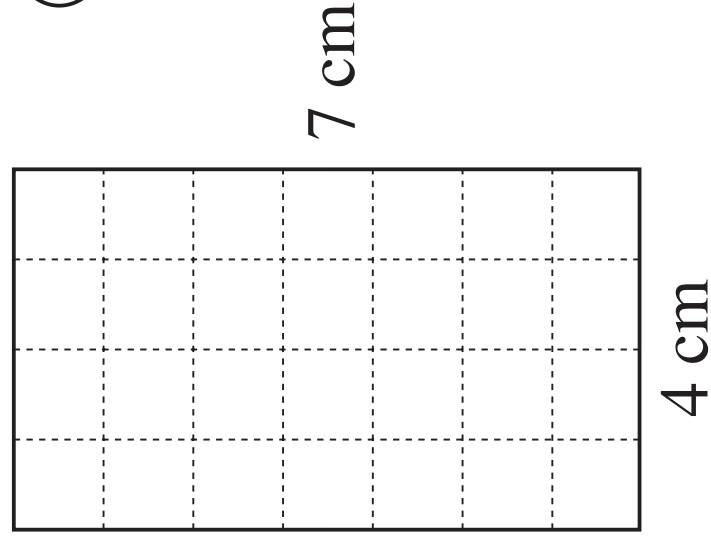


$$A_1 =$$

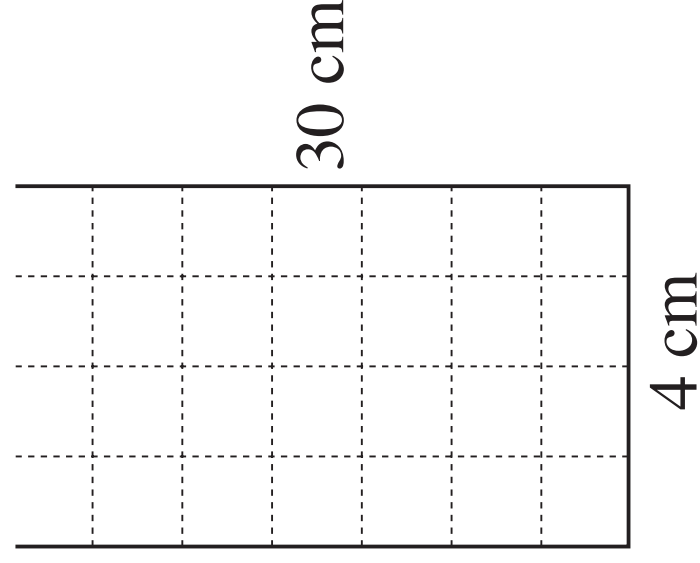
$$A_2 =$$

$$A_3 =$$

④



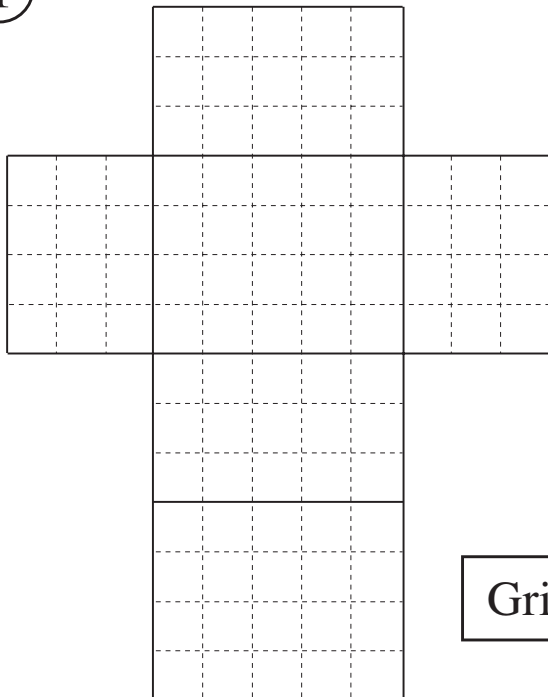
⑤



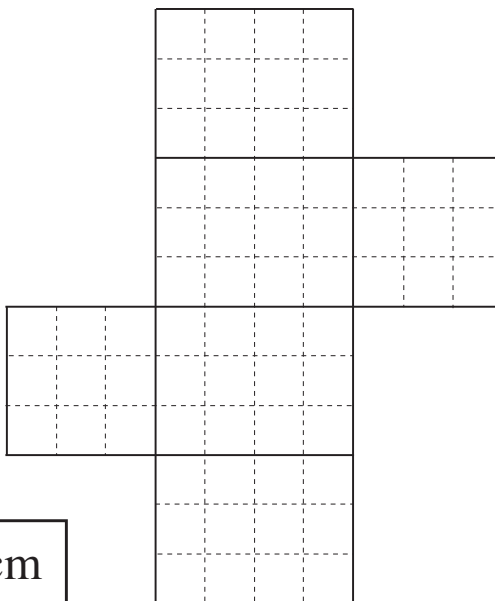
$$A_4 =$$

$$A_5 =$$

①

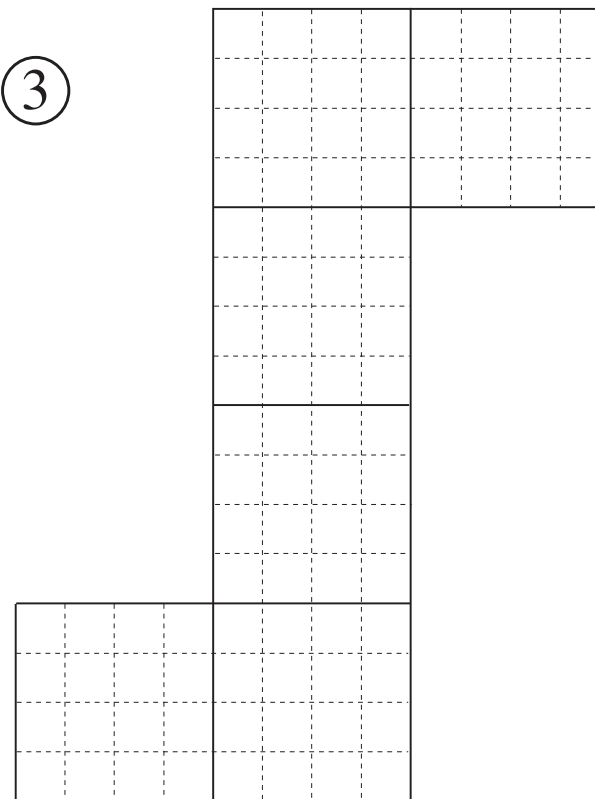


②


Scale

Grid unit: 1 cm

③



$$A = \dots\dots\dots$$

$$A = \dots\dots\dots$$

$$A = \dots\dots\dots$$

$$V = \dots\dots\dots$$

$$V = \dots\dots\dots$$

$$V = \dots\dots\dots$$

- a) We can work out the **perimeter** of a rectangle if we add the lengths of its sides.

$$P_{\text{rectangle}} = a + b + a + b = 2a + 2b = 2 \times (a + b)$$

$$P_{\text{square}} = a + a + a + a = 4 \times a$$

- b) We can work out the **area** of a rectangle if we multiply two adjacent sides.

$$A_{\text{rectangle}} = a \times b$$

$$A_{\text{square}} = a \times a$$

c) We can work out the **surface area** of a cuboid if we add the area of its faces.

$$A_{\text{cuboid}} = 2 \times (a \times b + a \times c + b \times c)$$

$$A_{\text{square-based cuboid}} = 2 \times (a \times a) + 4 \times (a \times b)$$

$$A_{\text{cube}} = 6 \times a \times a$$

- d) We can work out the **volume** of a cuboid if we multiply the lengths of the 3 edges which meet at a vertex.

$$V_{\text{cuboid}} = a \times b \times c$$

$$V_{\text{square-based cuboid}} = a \times a \times b$$

$$V_{\text{cube}} = a \times a \times a$$



a									
b									
c									

LP 55/3

No. of cards per envelope									
No. of envelopes									

a)

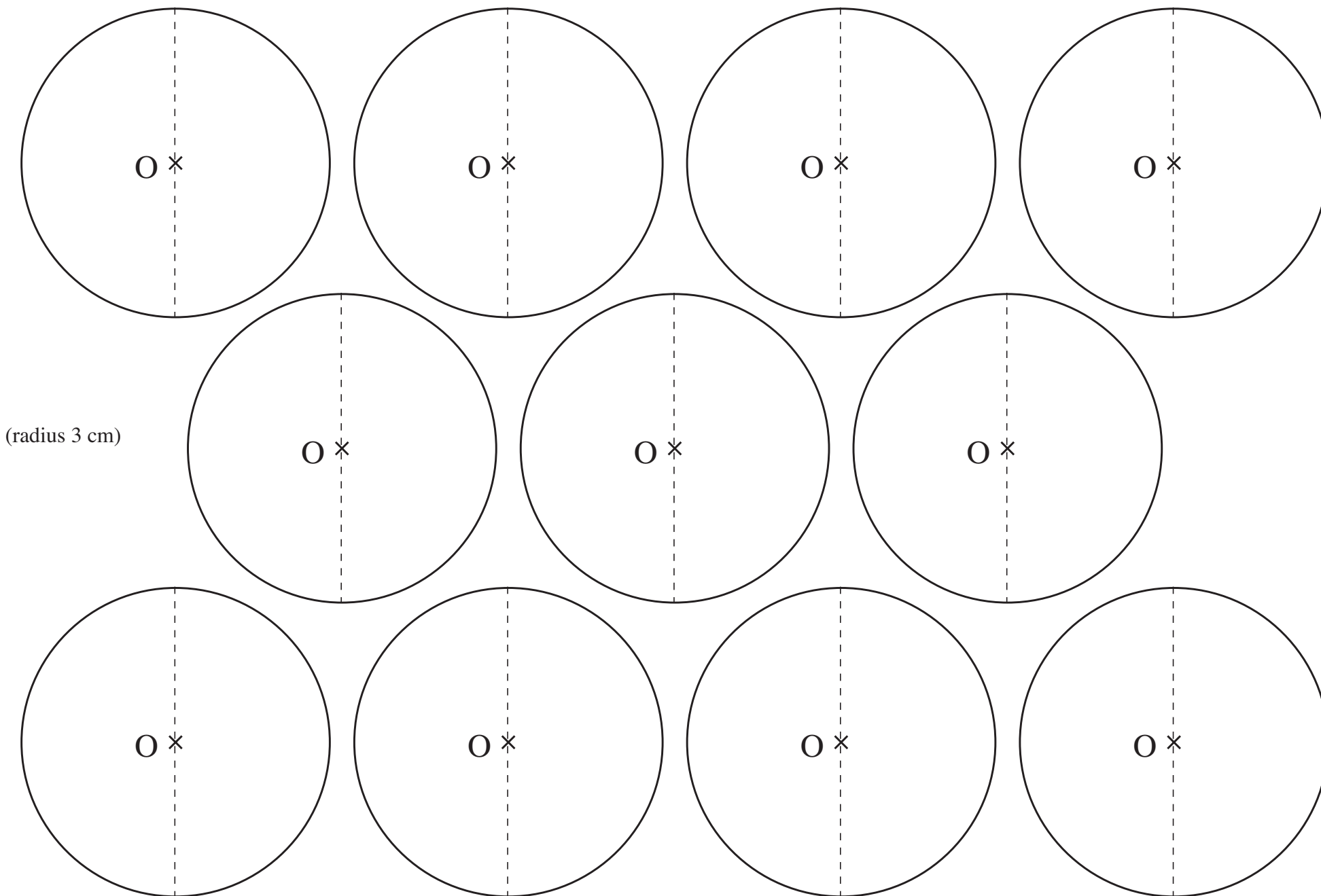
a	8	0	14	7		13	29		28
b	22	30	16		20			– 1	

Rule:

b)

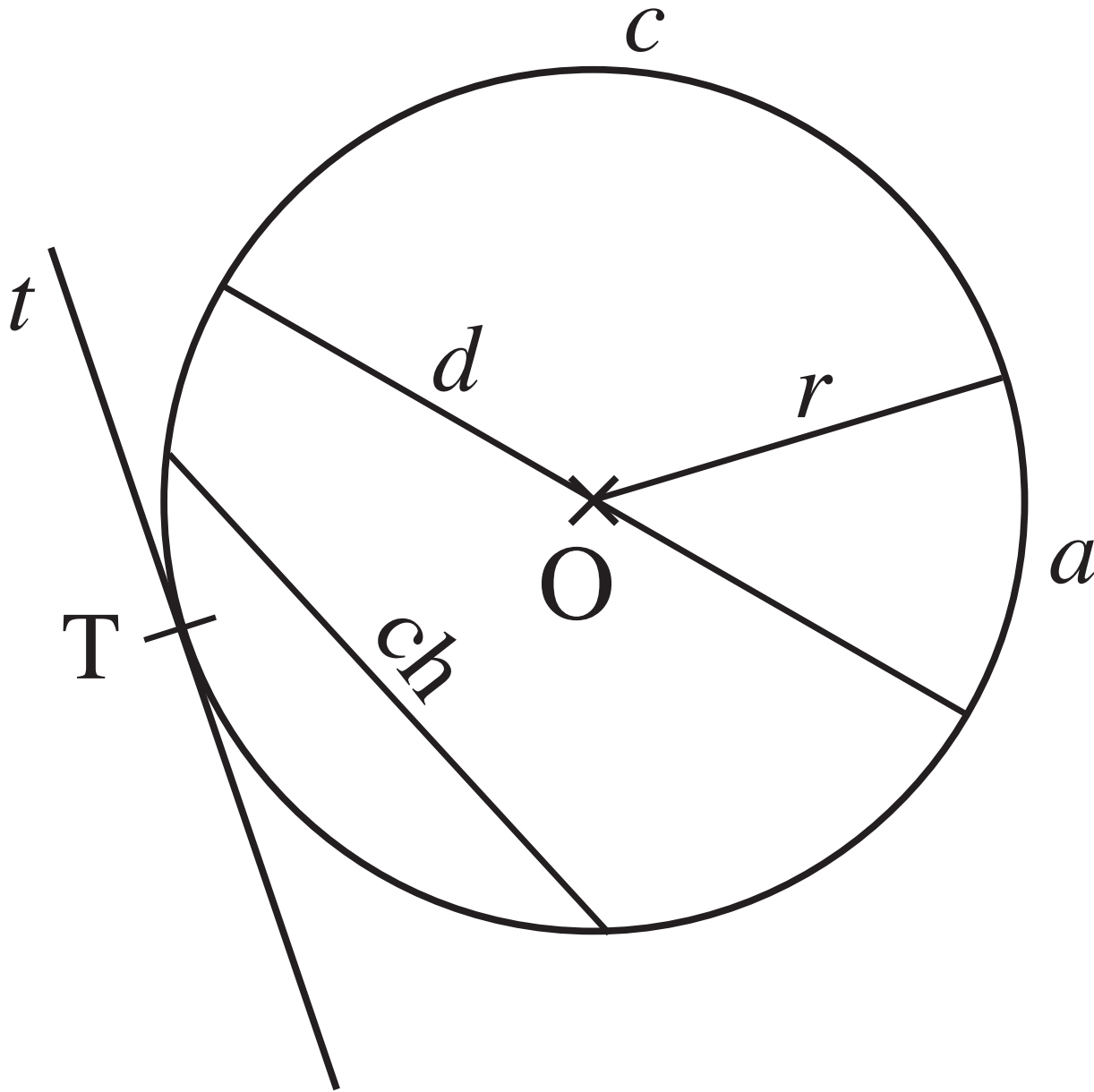
x	26	42	88	110		98	1410		1
y	13	21	44		33			– 400	

Rule:



Stick straws behind dotted lines.

- a) The **circumference** of a circle is the set of points in a plane which are a given distance (not zero) from a given point in the **plane**.
- b) A **circle** is the set of points in a plane which are equal to or **less** **than** a given distance from a point in the plane.
- c) The surface of a sphere is the set of points in **space** which are a given **distance** (not zero) from a given point in space.
- d) A **sphere** is the set of points in space which are equal to or less than a given distance from a **given** **point** in space.



circumference (c)

centre (O)

radius (r)

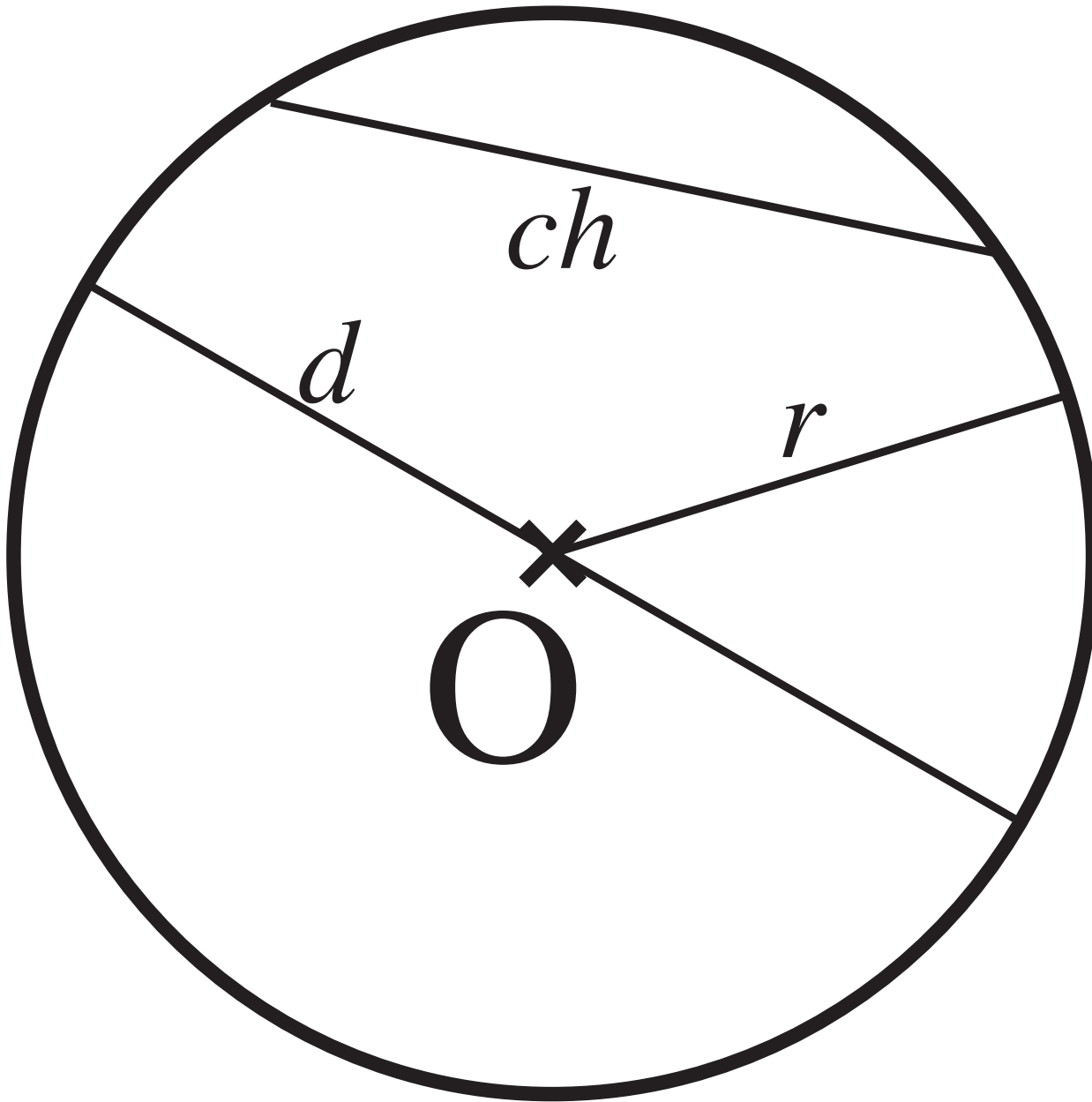
diameter (d)

arc (a)

chord (ch)

tangent (t)

tangent point (T)

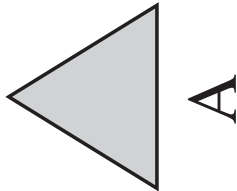


sector

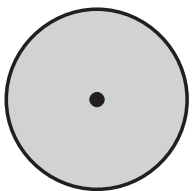
segment

semi-circle

a)



A



B

b)



A

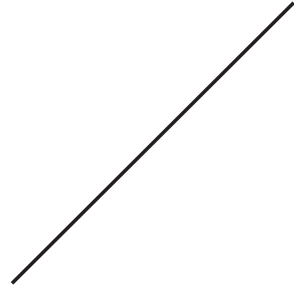


B

c)



A



e

d)



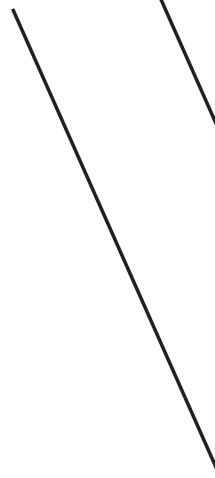
A



B

C

e)



e



f

f)

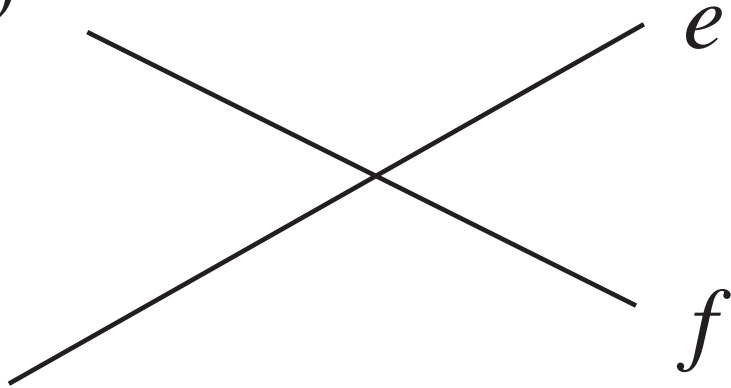
e



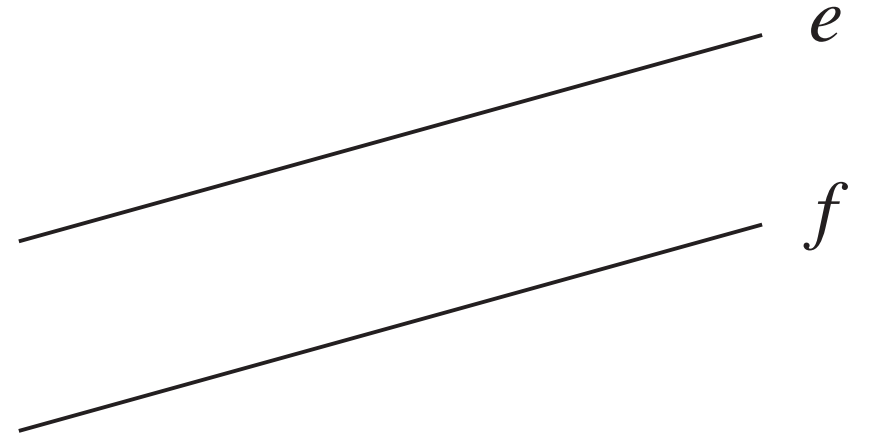
f



a) i)



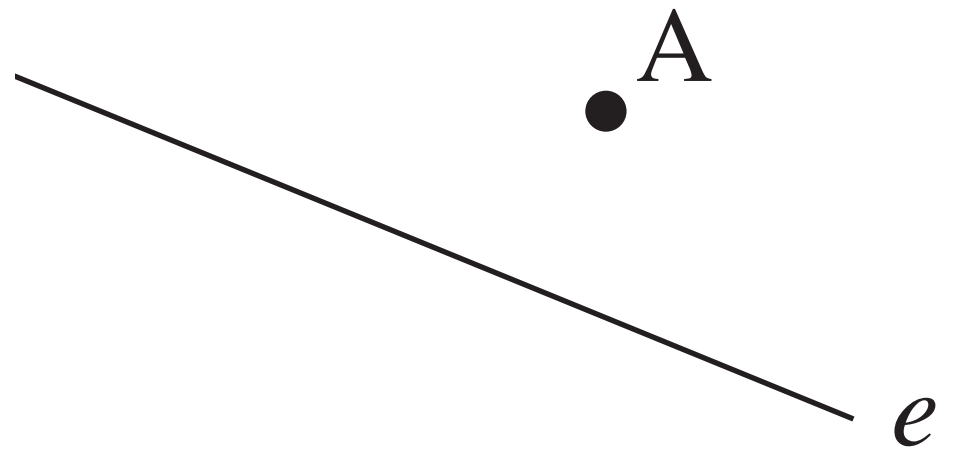
ii)



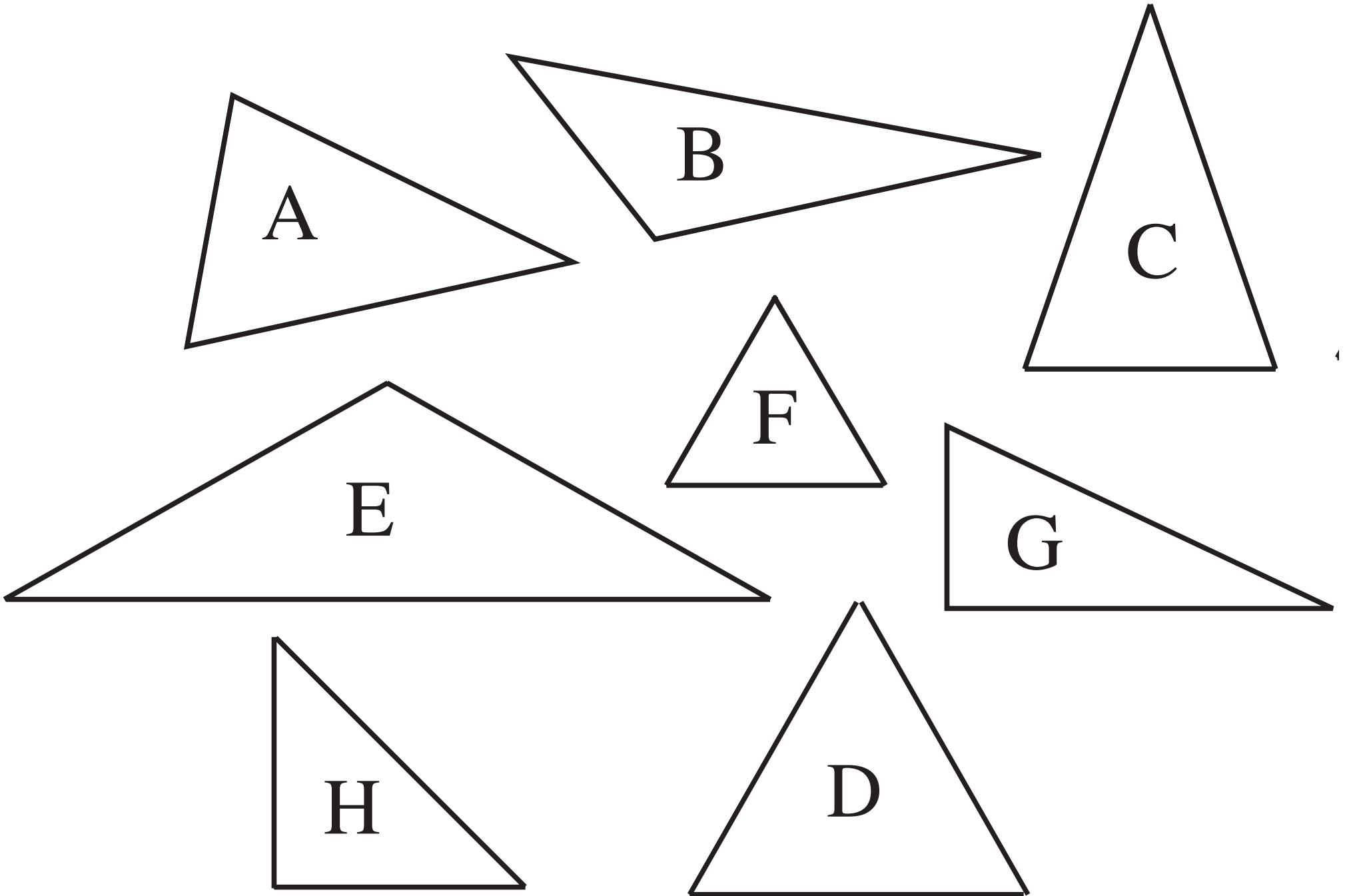
b)



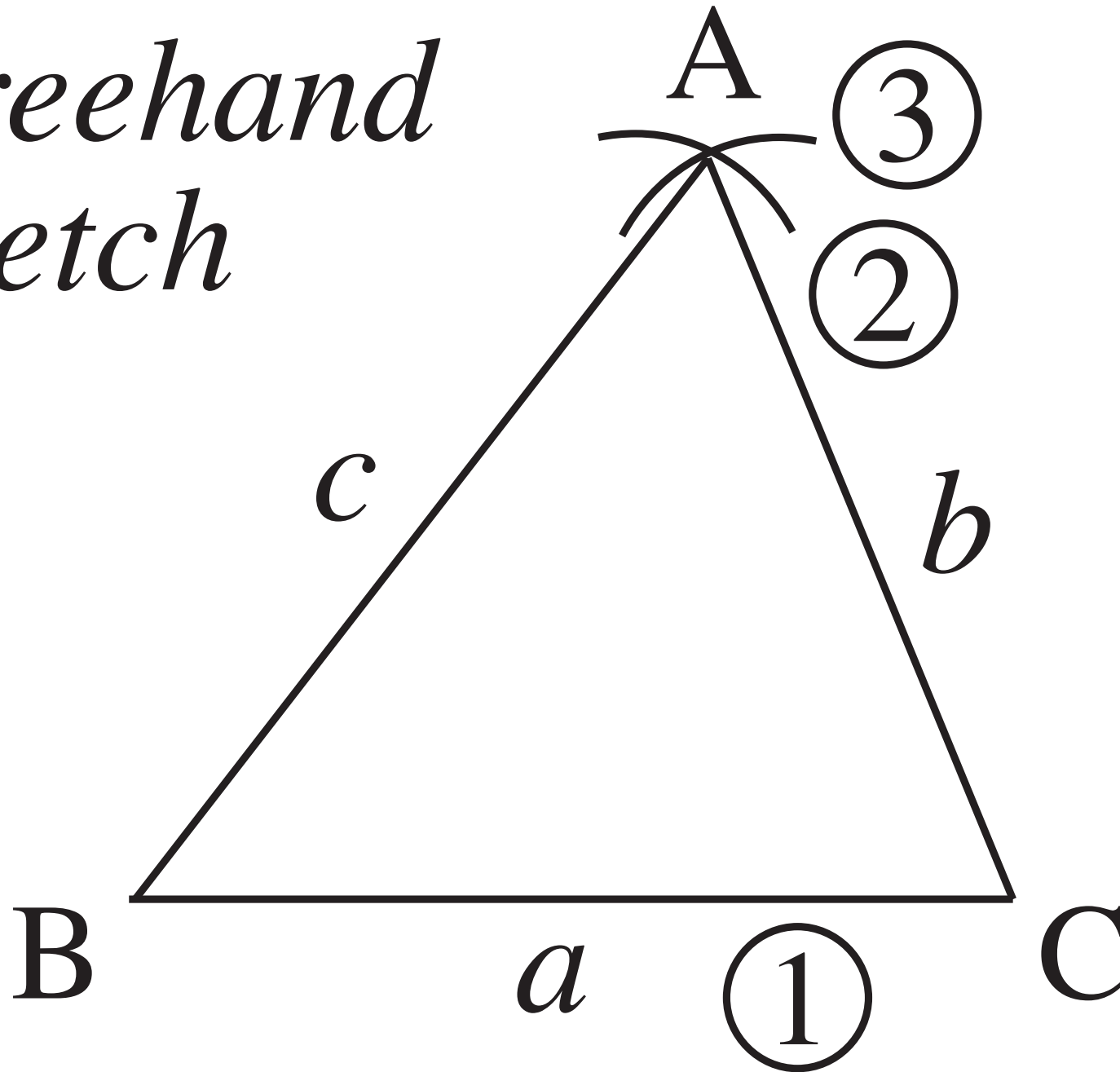
c)



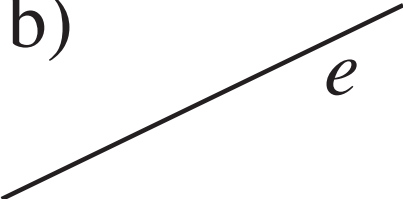
- a) The **circumference** of a circle is the set of points in a plane which are an equal distance from the
.
- b) The of a circle is a
. which connects the centre of the circle with a point on the circumference.
- c) A **sphere** is the set of points which are not
than a given distance from a point in space, as long as the given distance is not zero.

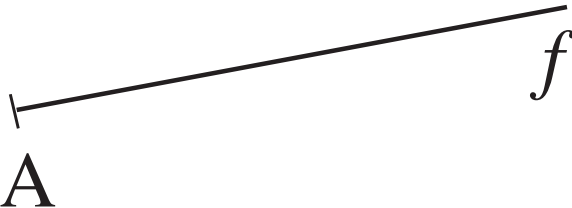


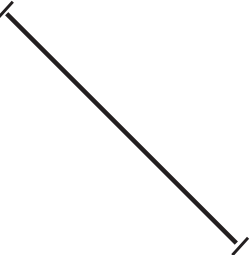
*Freehand
sketch*

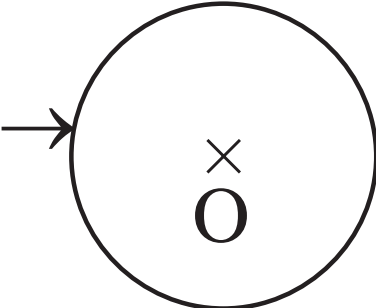


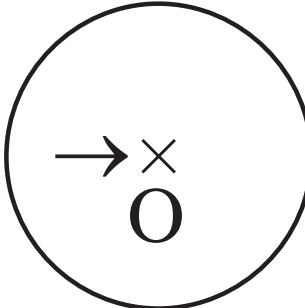
a) \times
P

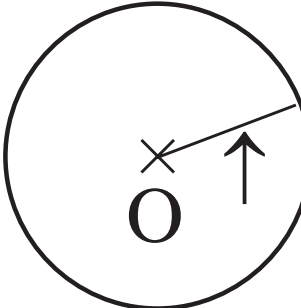
b) 

c) 

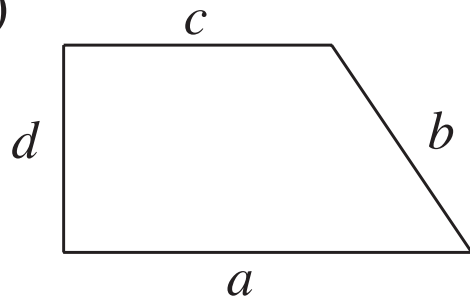
d) 

e) 

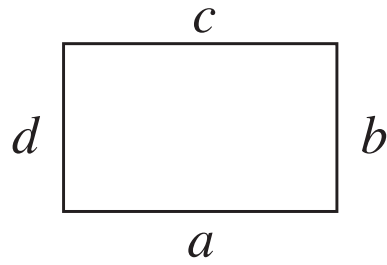
f) 

g) 

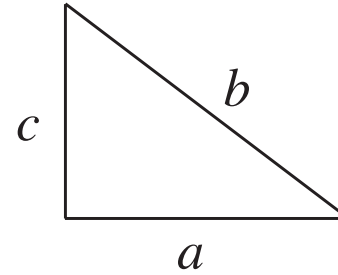
a)



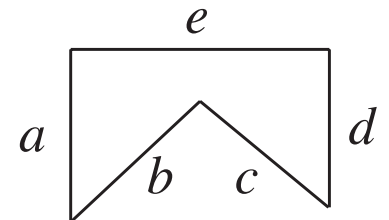
b)



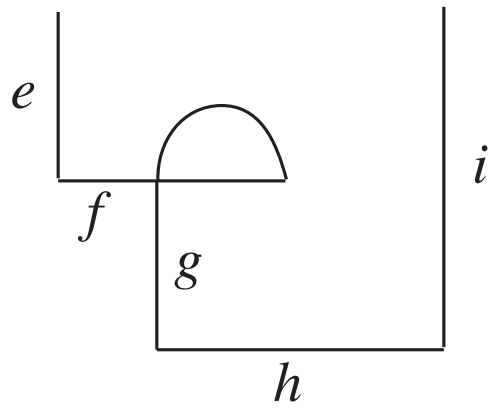
c)



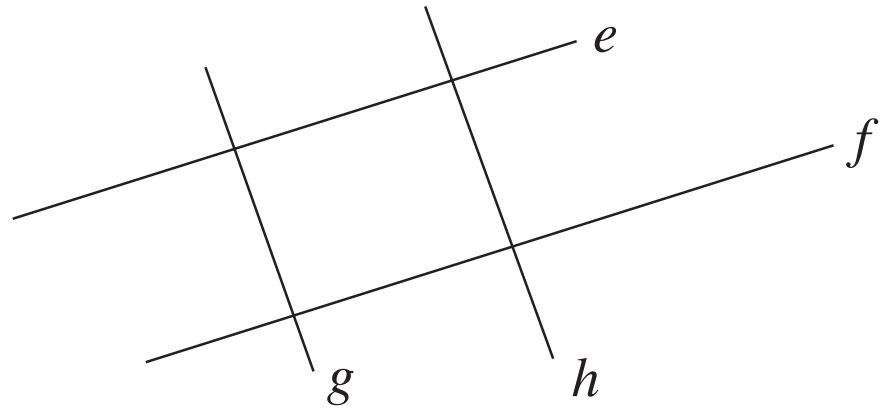
d)

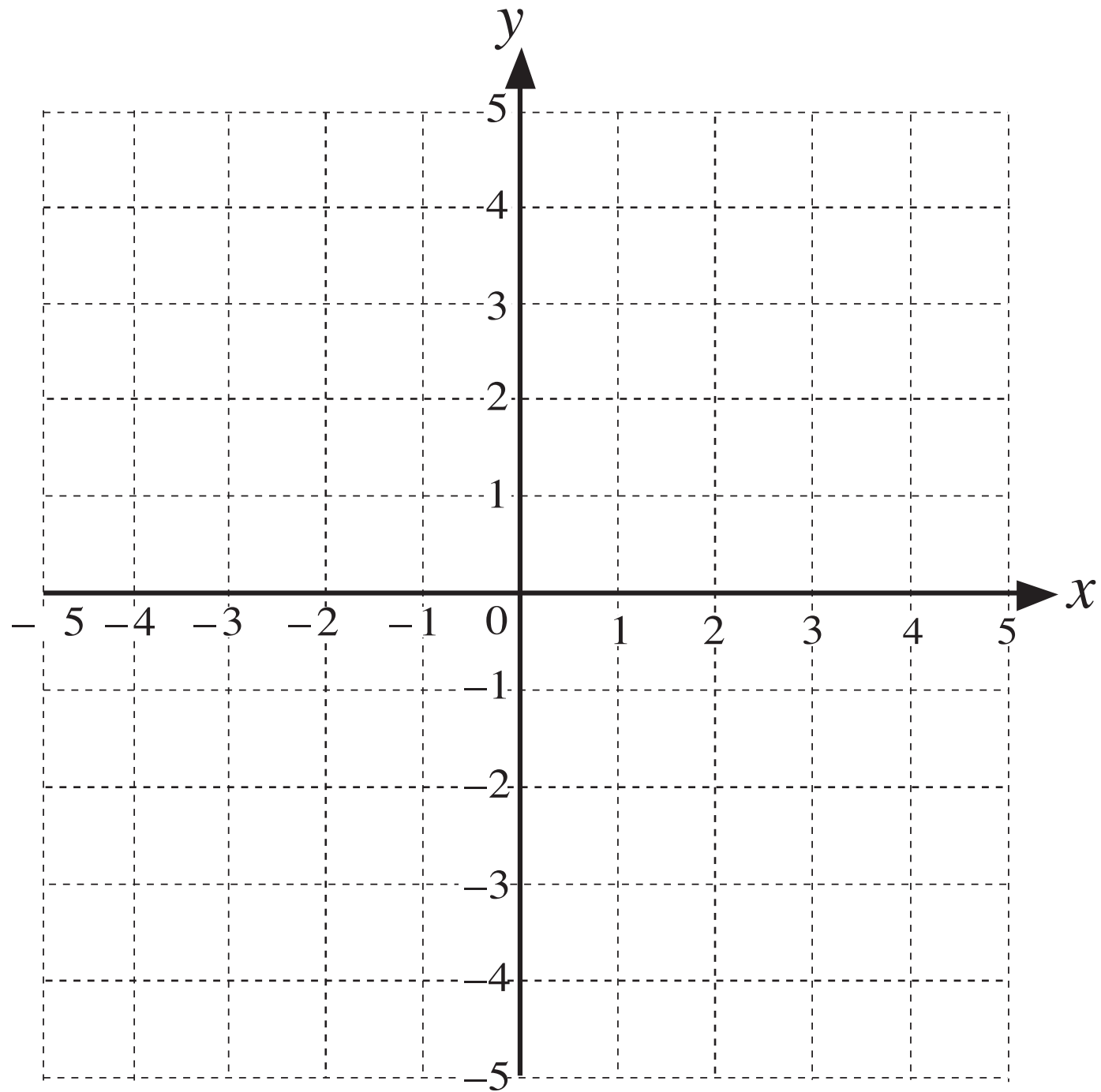


e)

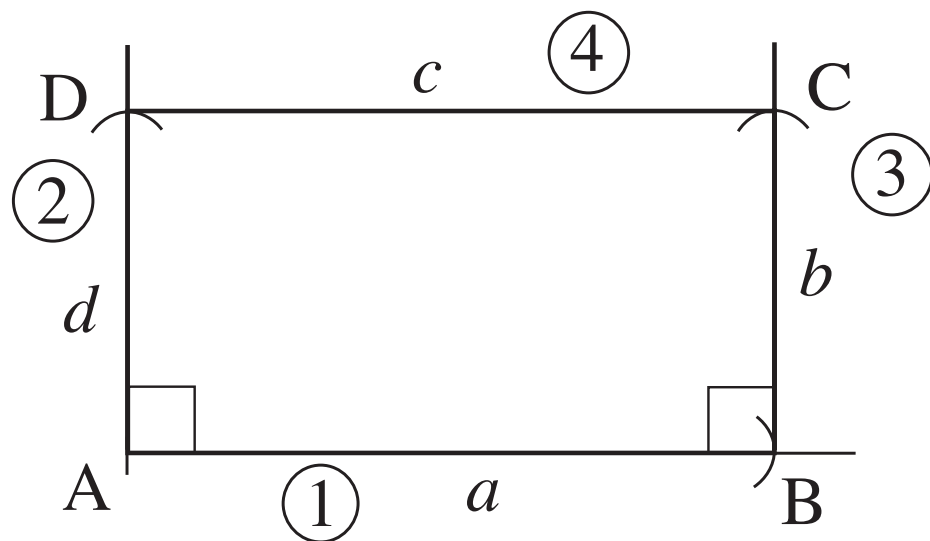


f)

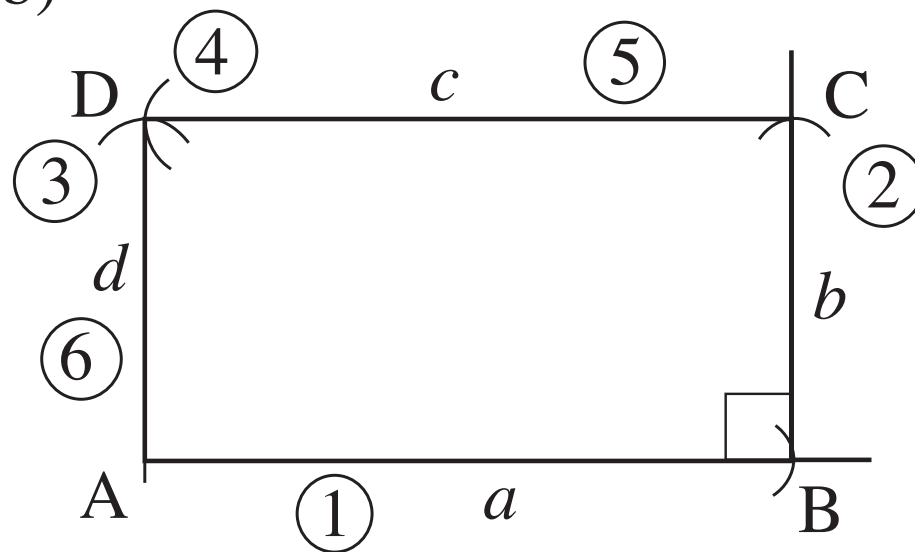




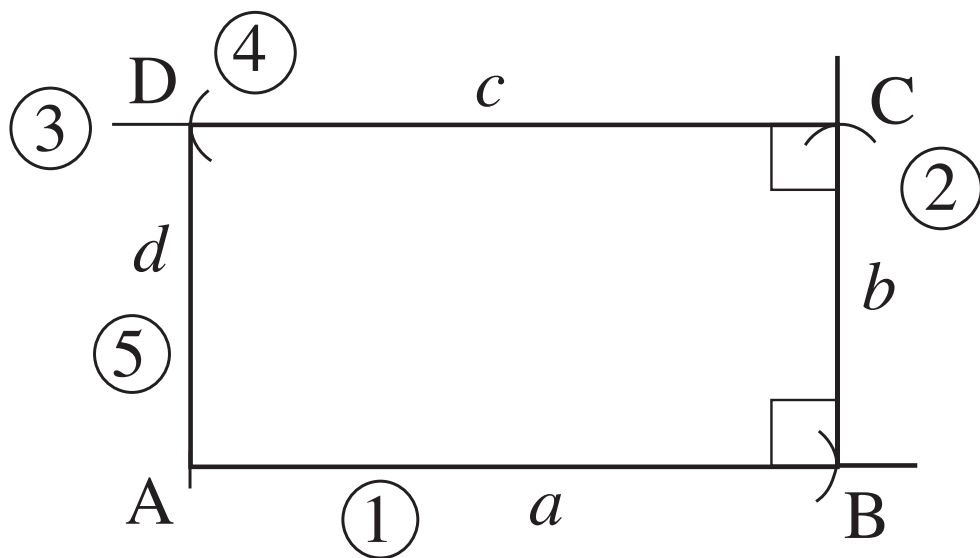
a)



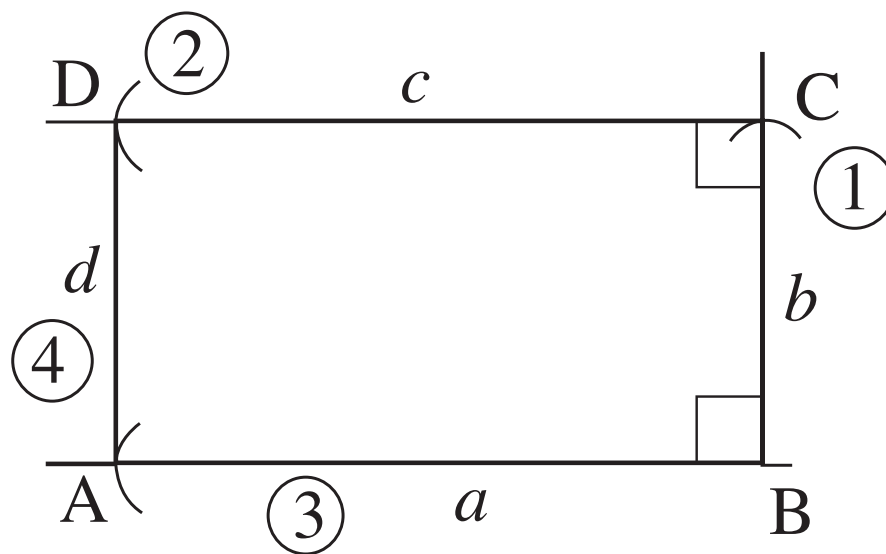
b)

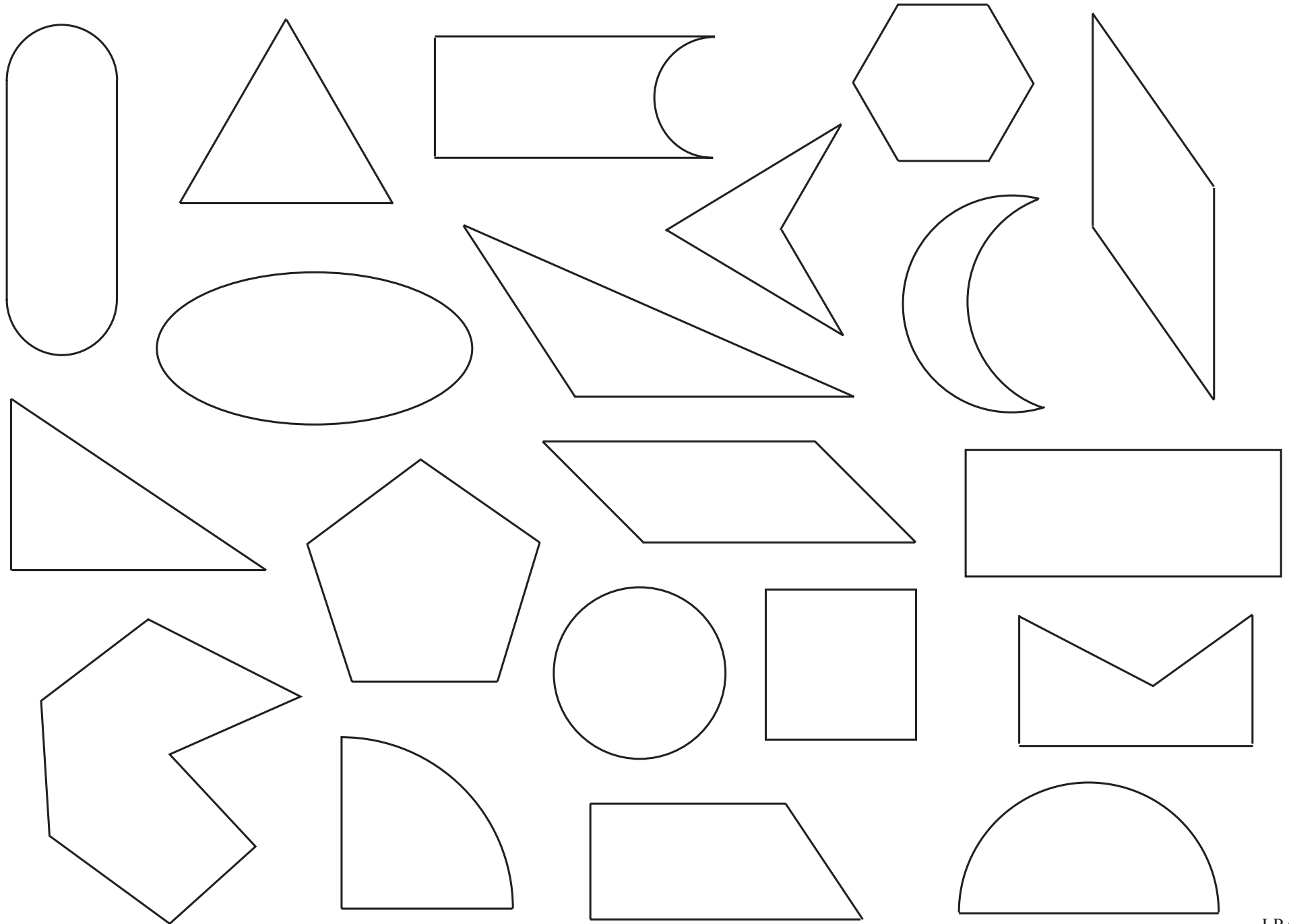


c)

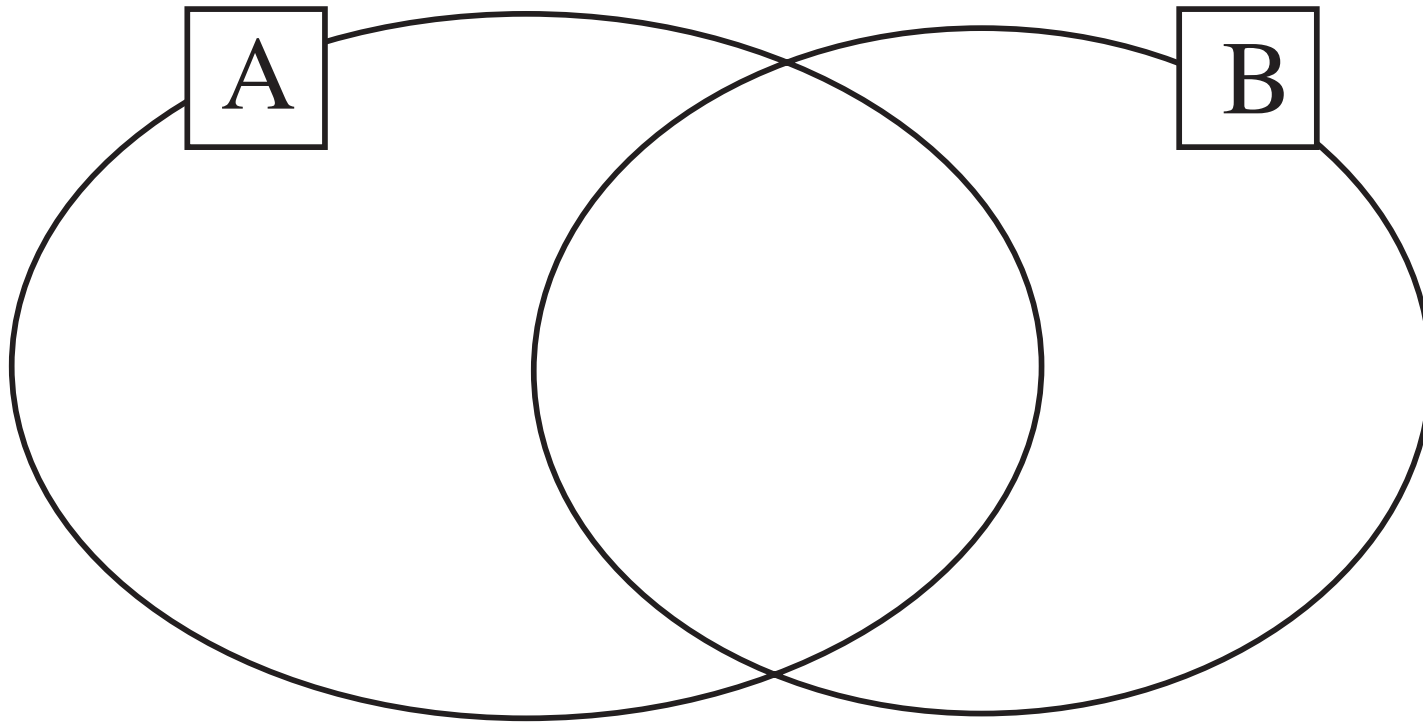


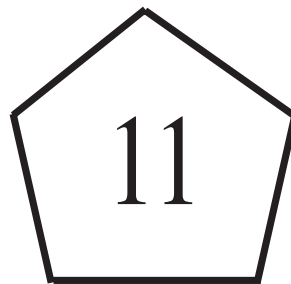
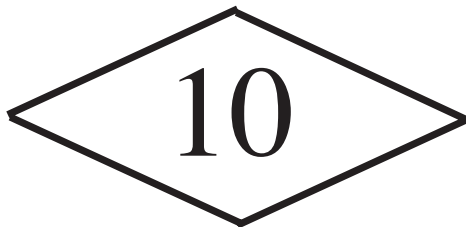
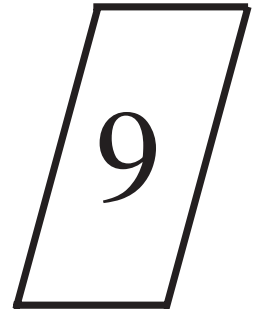
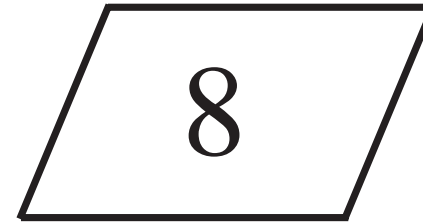
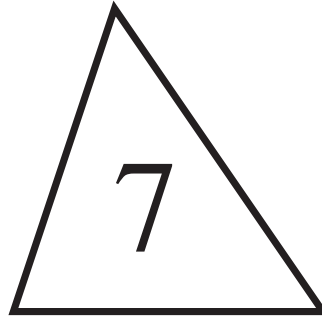
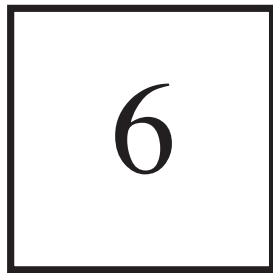
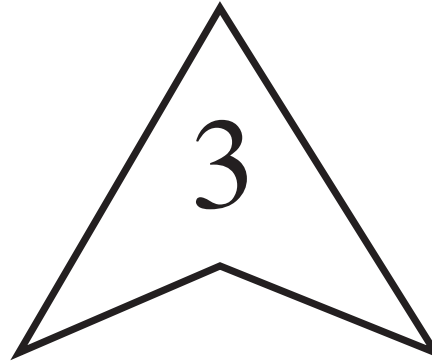
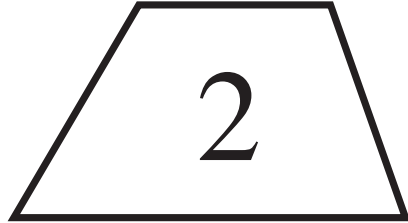
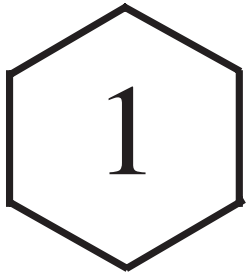
d)

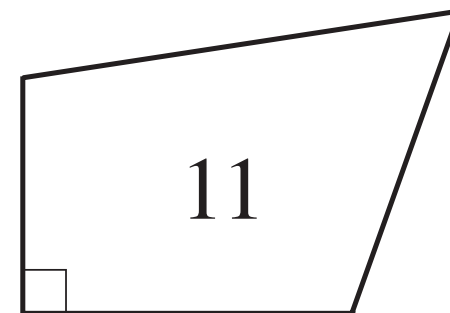
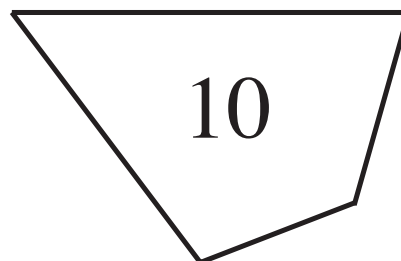
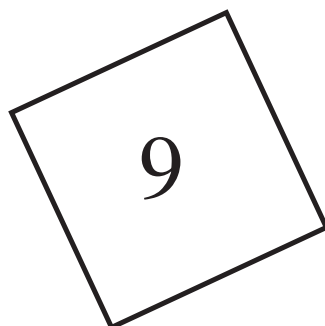
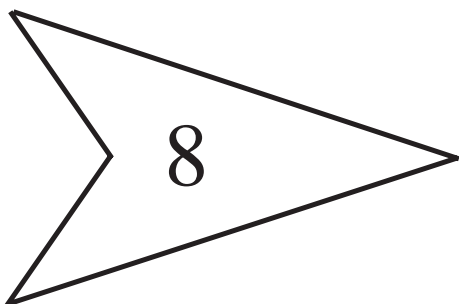
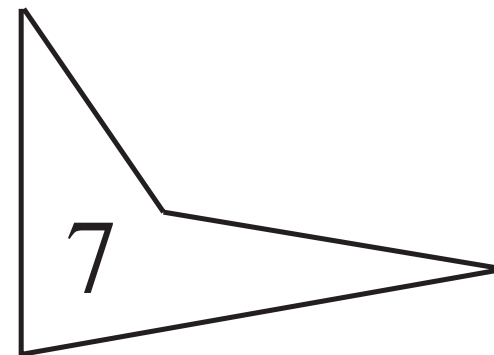
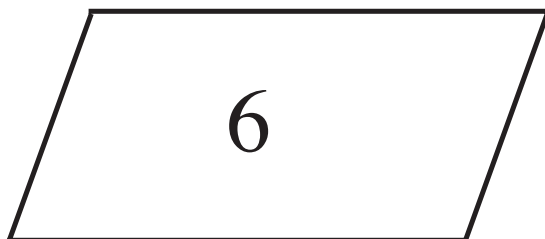
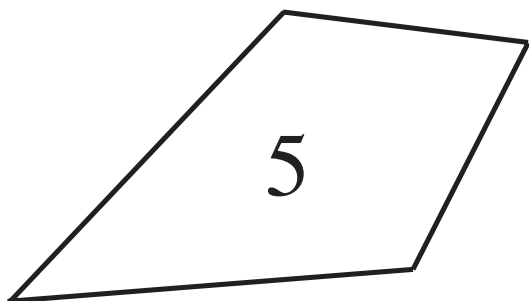
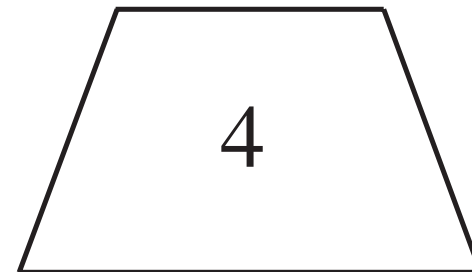
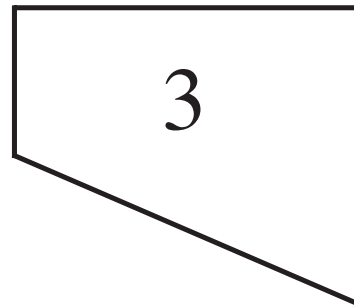
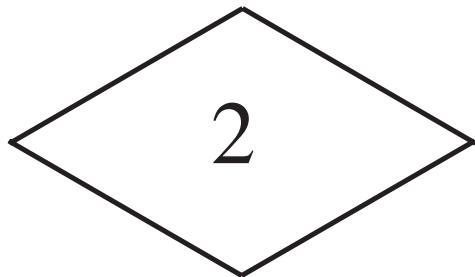


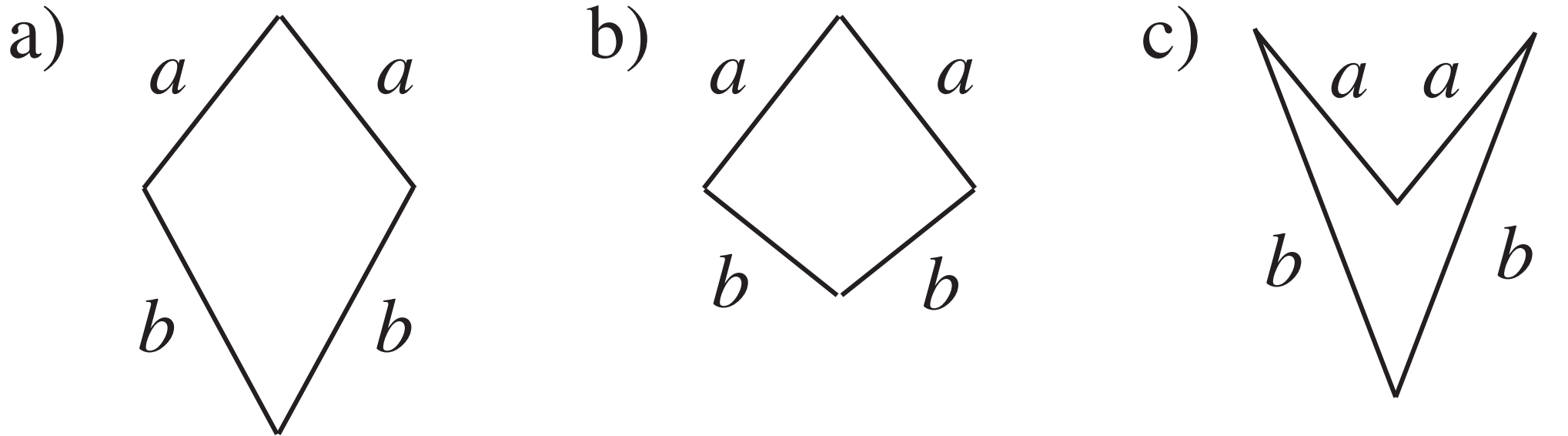


Polygons

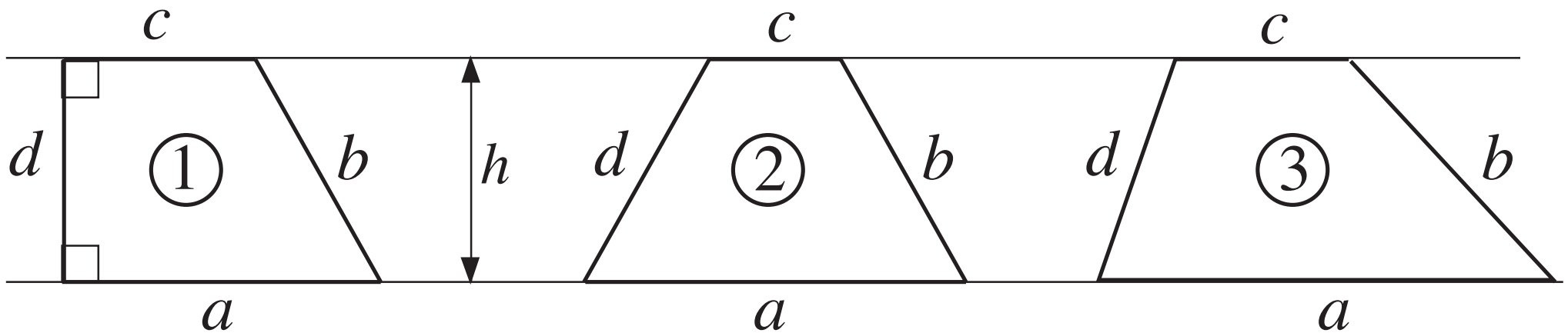




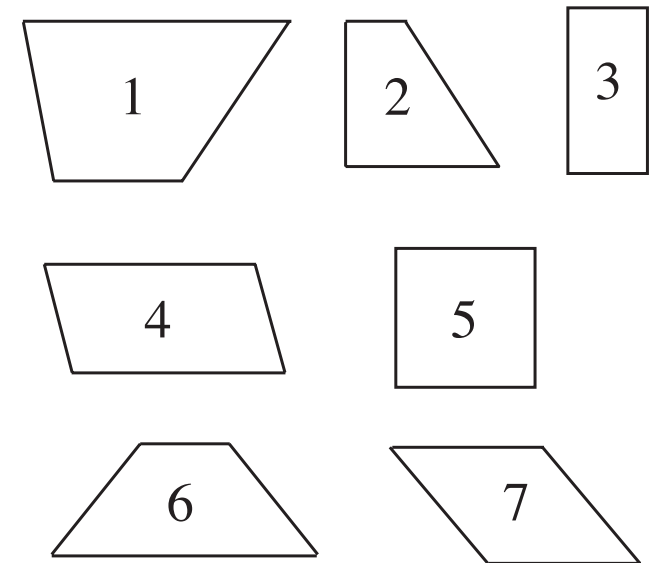
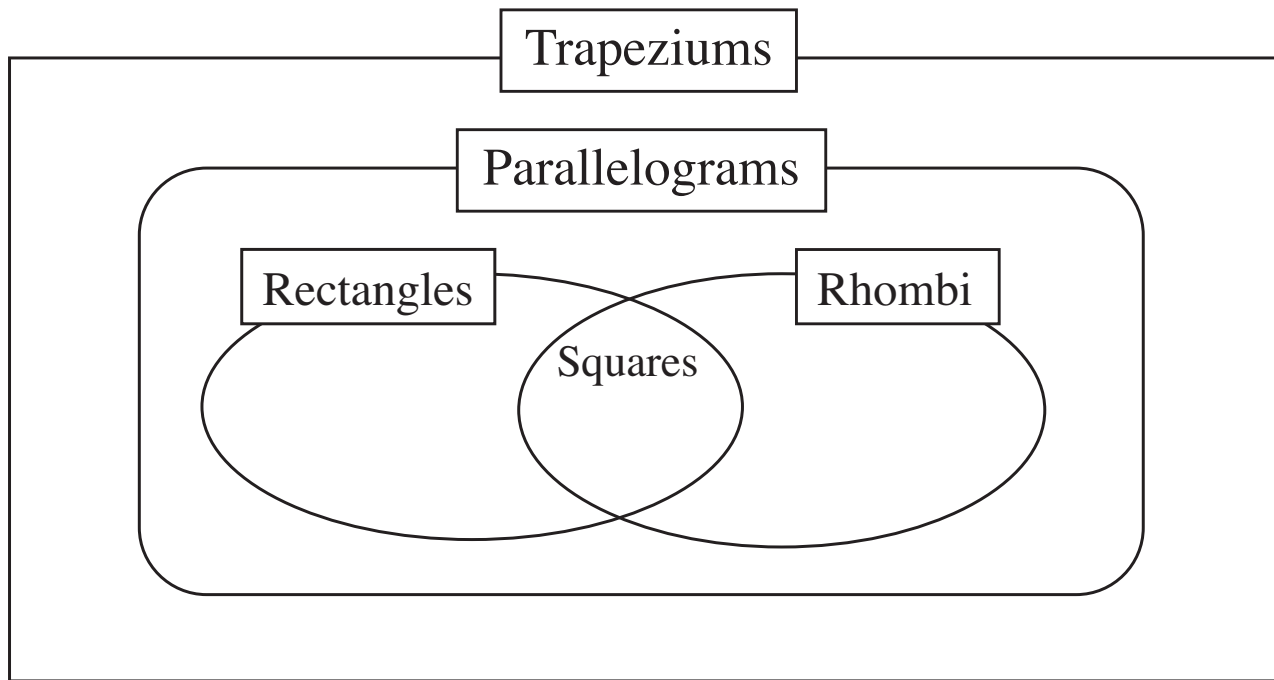




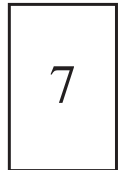
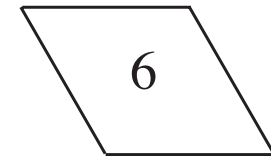
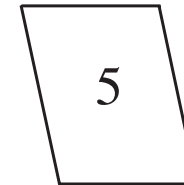
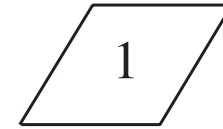
LP 61/7



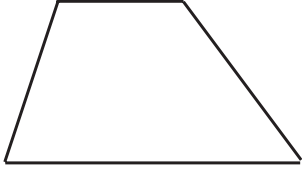
LP 62/3



Parallelograms

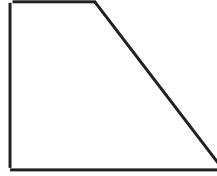


i)



$P =$

ii)



$P =$

iii)



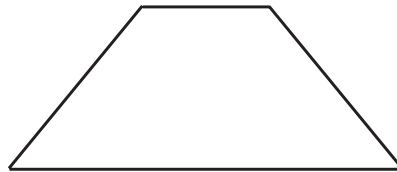
$P =$

iv)



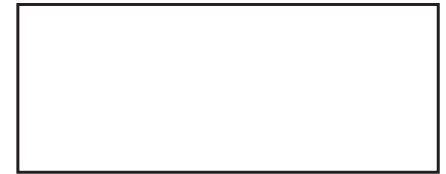
$P =$

v)

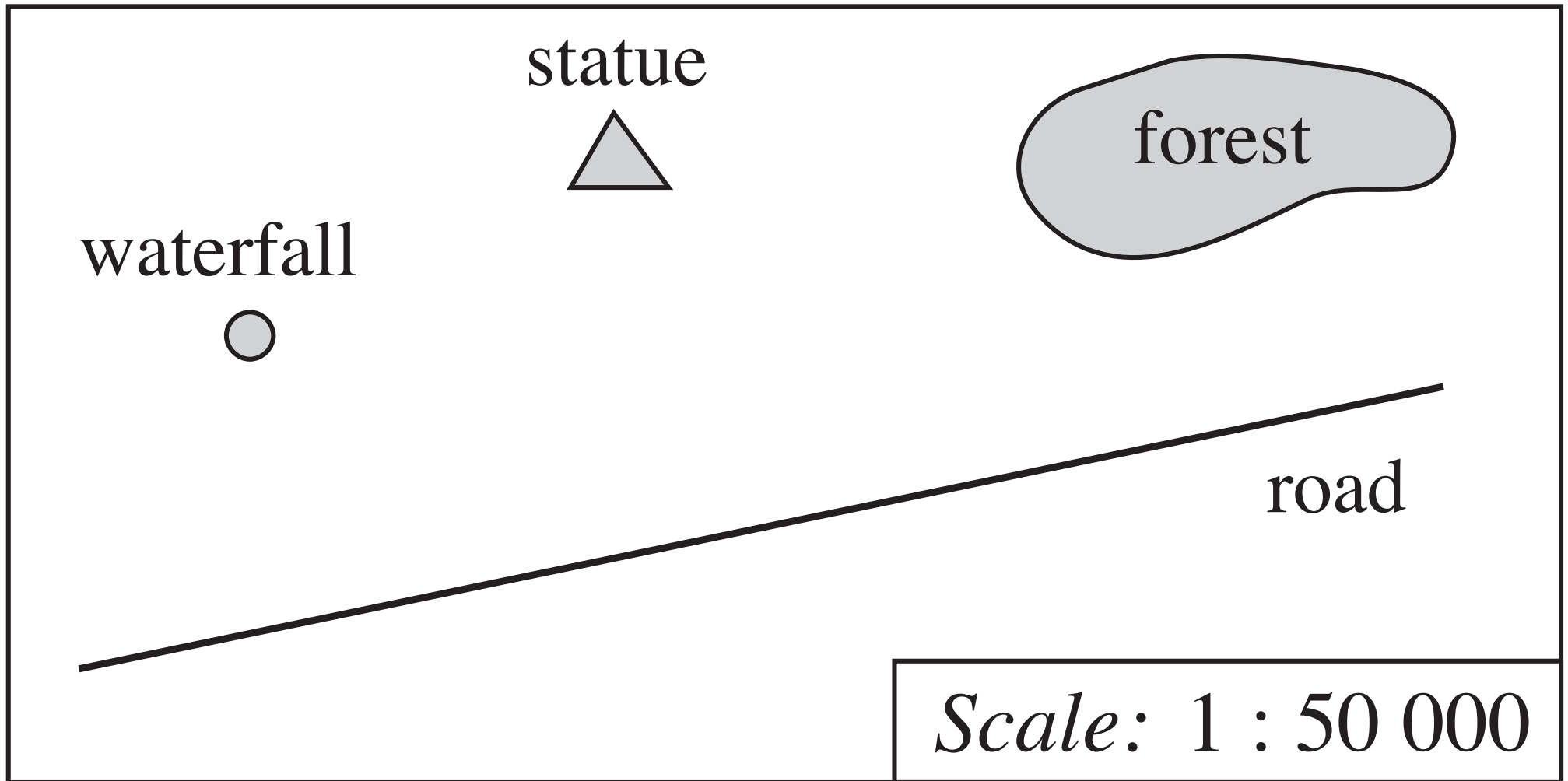


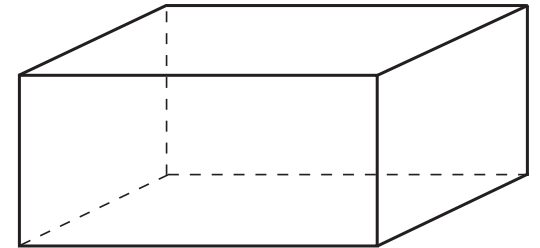
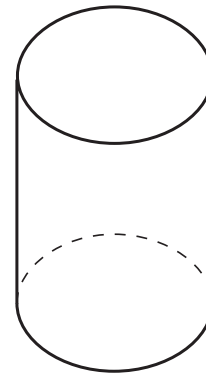
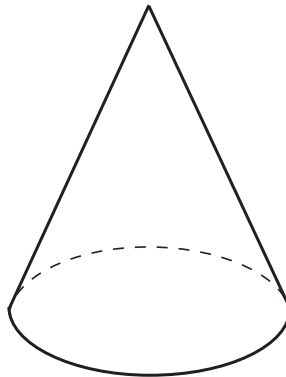
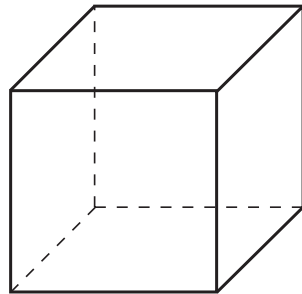
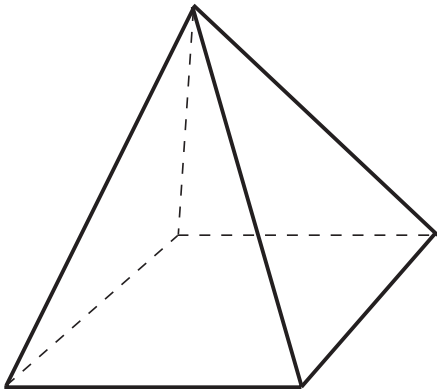
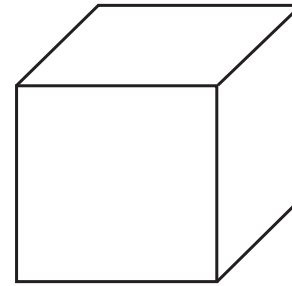
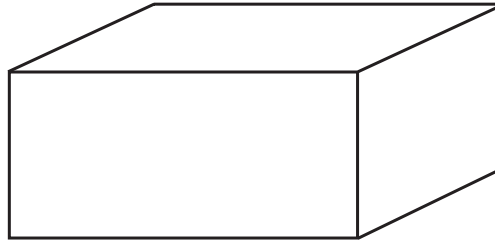
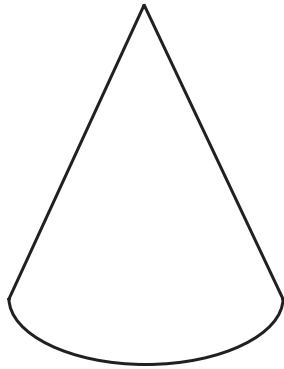
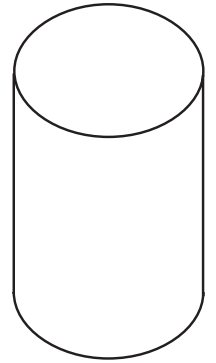
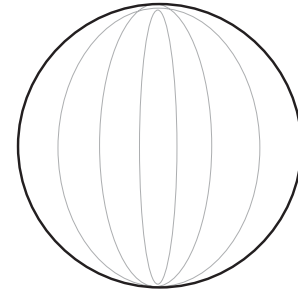
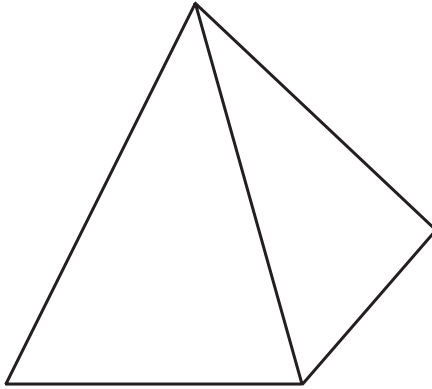
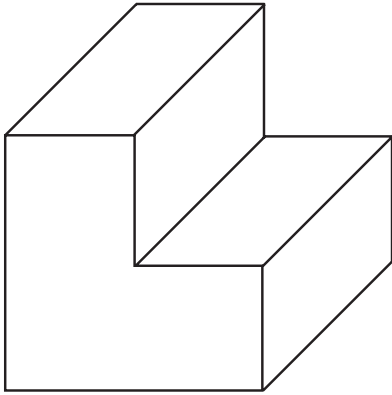
$P =$

vi)

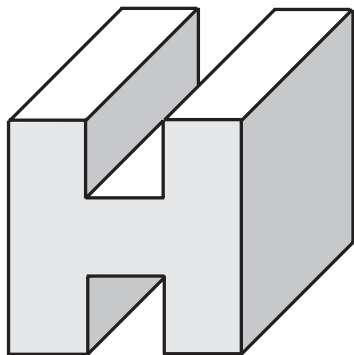
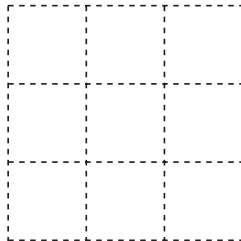
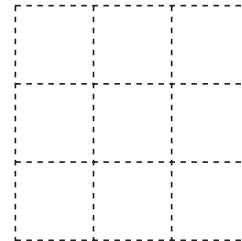
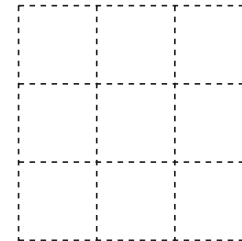


$P =$



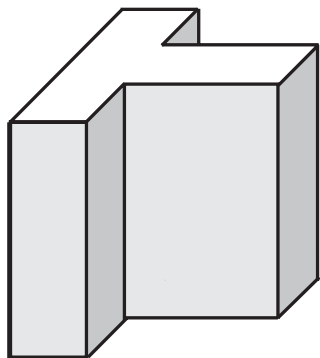
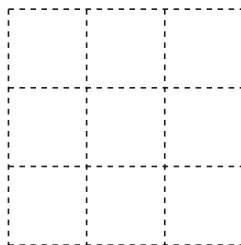
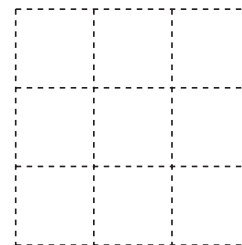
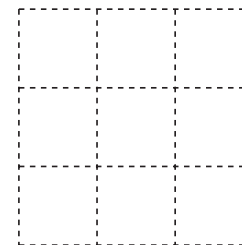


a)

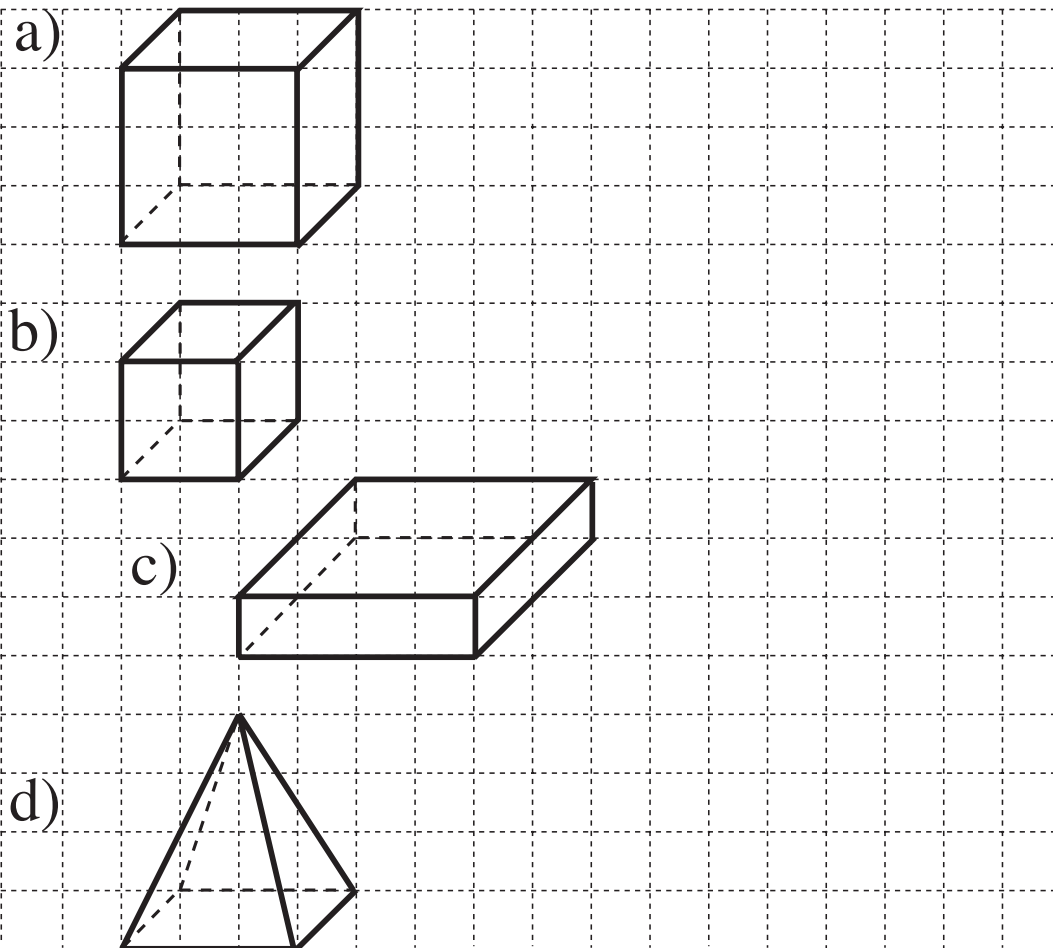

Front view

Side view

Top view


Volume =

b)


Front view

Side view

Top view


Volume =



Name: _____

$$v = \square \quad e = \square \quad f = \square$$

Name: _____

$$v = \square \quad e = \square \quad f = \square$$

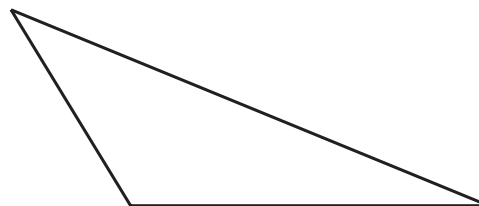
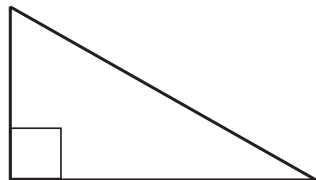
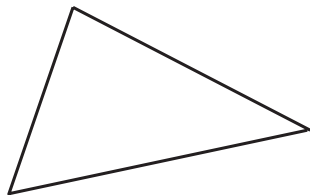
Name: _____

$$v = \square \quad e = \square \quad f = \square$$

Name: _____

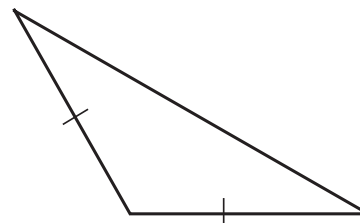
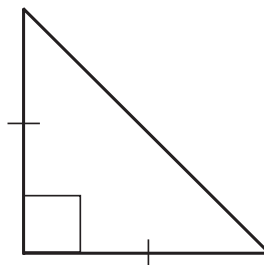
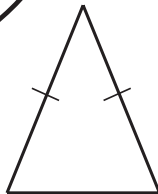
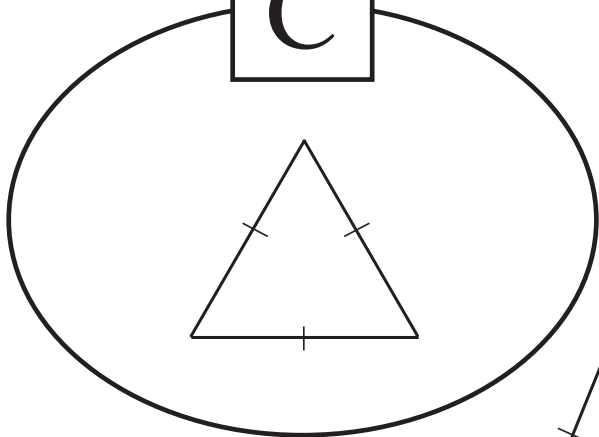
$$v = \square \quad e = \square \quad f = \square$$

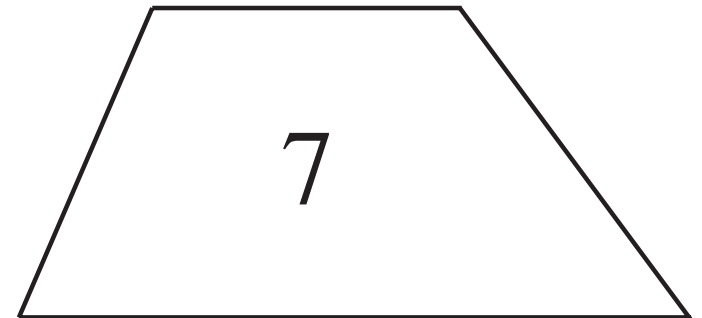
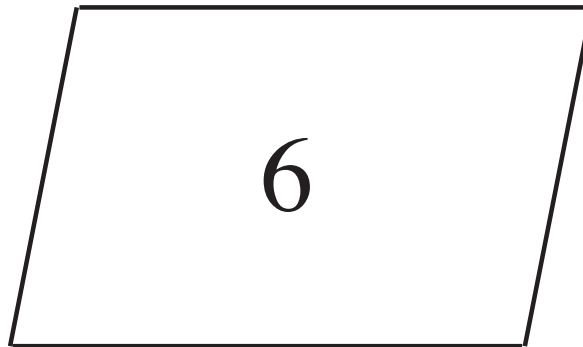
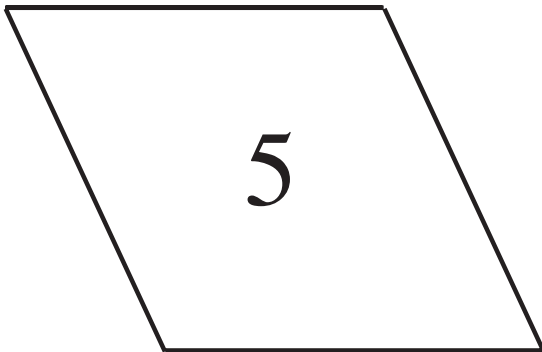
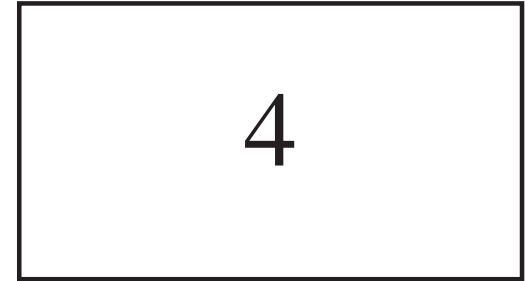
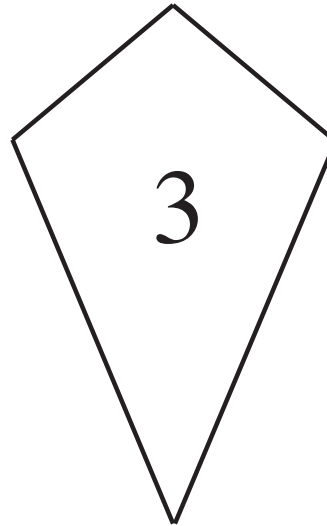
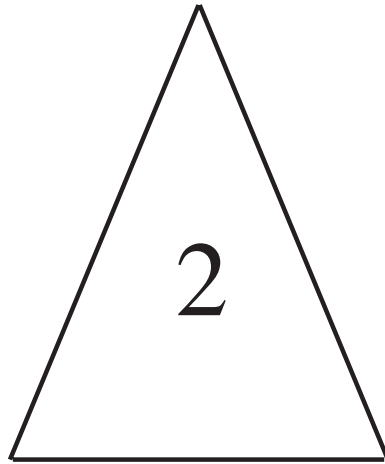
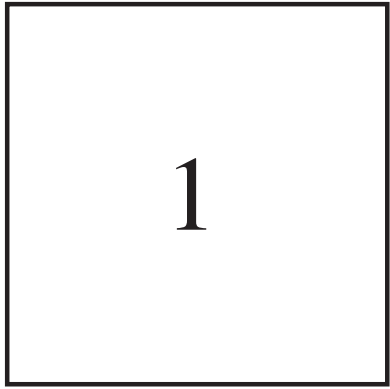
A

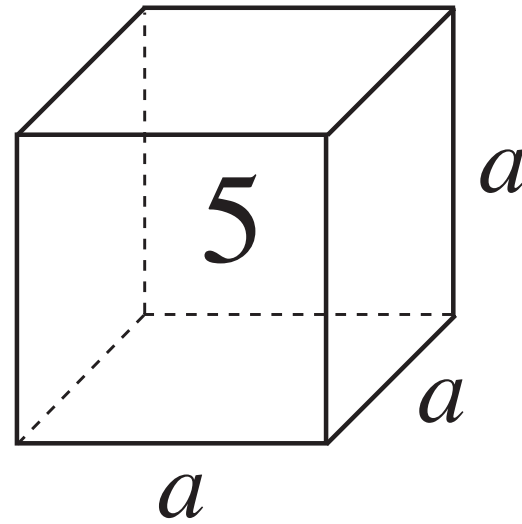
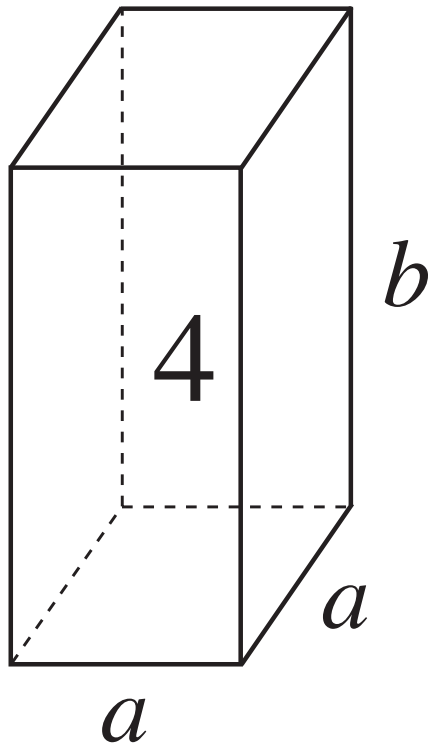
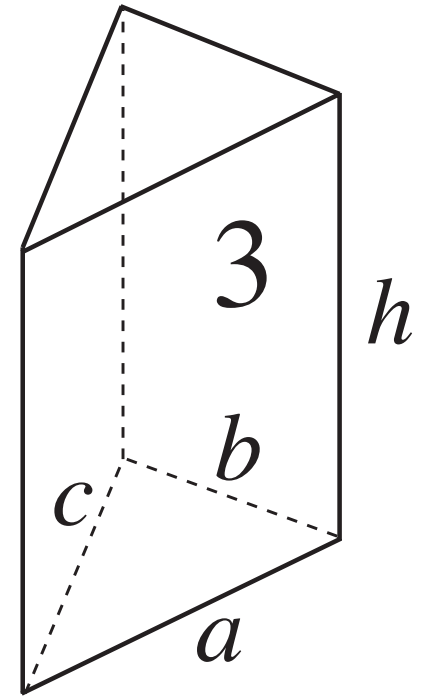
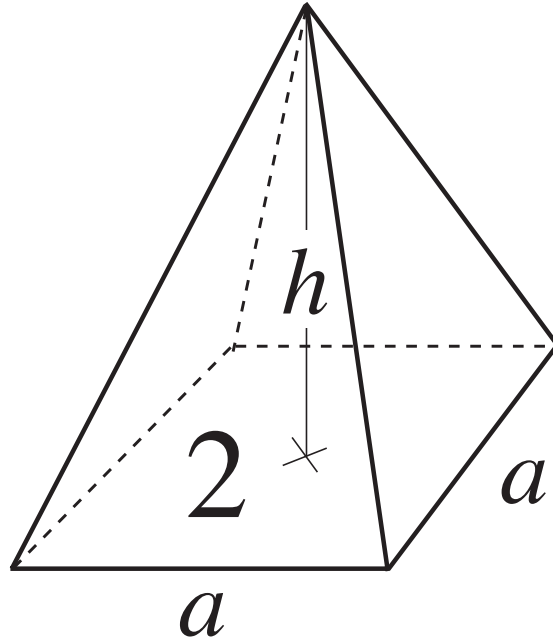
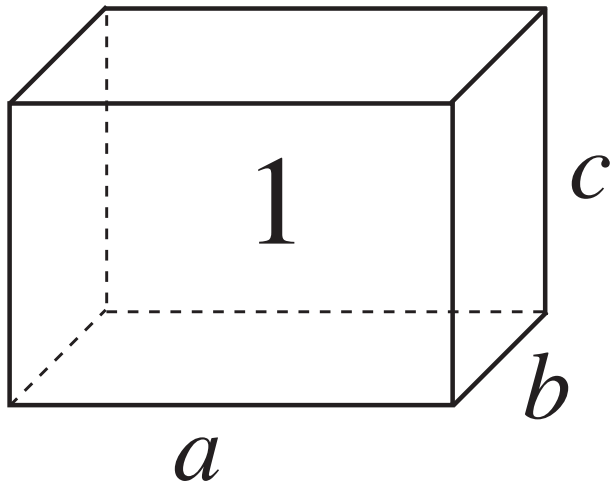


B

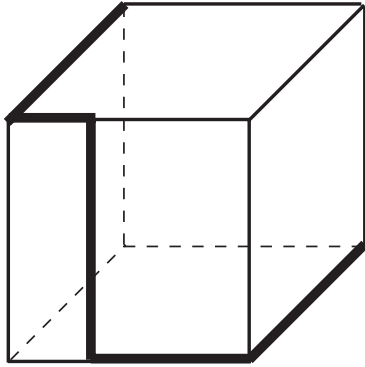
C



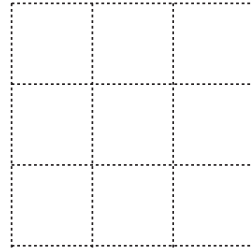




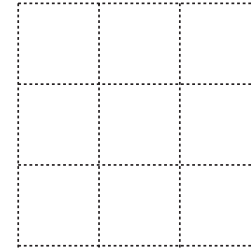
a)



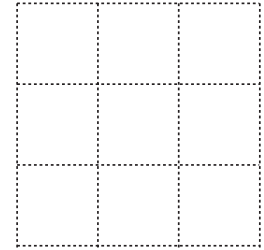
Front view



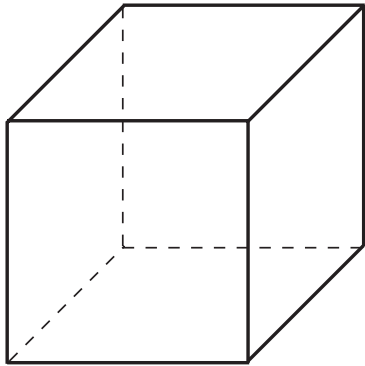
Side view



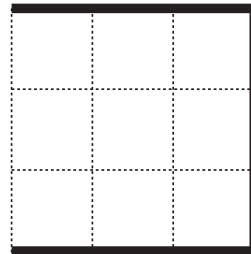
Top view



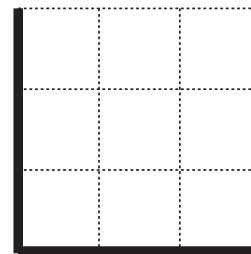
b)



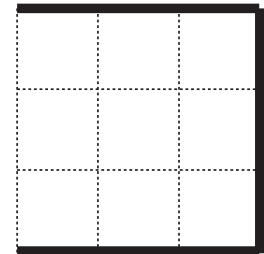
Front view



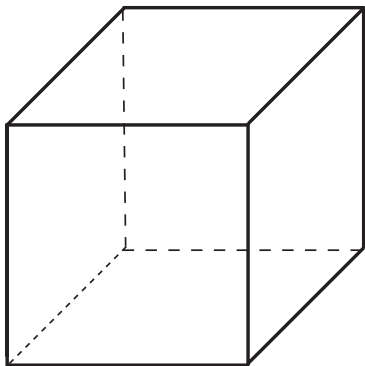
Side view



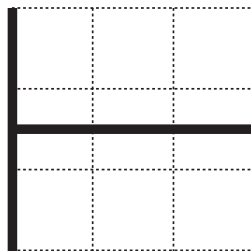
Top view



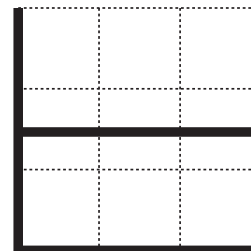
c)



Front view



Side view



Top view

