

## Paper 2 and Paper 3 Preparation Paper

**AQA - Foundation**  
**High Chance**



Corbettmaths

Ensure you have: Pencil, pen, ruler, protractor, pair of compasses and eraser

You will need a calculator

### Guidance

1. Read each question carefully before you begin answering it.
2. Don't spend too long on one question.
3. Attempt every question.
4. Check your answers seem right.
5. Always show your workings

Revision for this test

[www.corbettmaths.com/contents](http://www.corbettmaths.com/contents)



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1. Here are four digits.

9 4 7 5

(a) Use two of these digits to make the largest possible two-digit number.

97

(1)

(b) Use all four of these digits to make the four-digit number closest to 5000.

4975

(1)

2. Write these numbers in order of size.  
Start with the smallest number.

4.2      0.42      0.024      0.93      0.039

0.024, 0.039, 0.42, 0.93, 4.2

(1)

3. (a) Work out the difference between  $-3^{\circ}\text{C}$  and  $4^{\circ}\text{C}$

7<sup>°C</sup>  
(1)

At 5am the temperature is  $-6^{\circ}\text{C}$

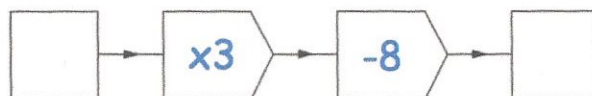
By 2pm the temperature went up by  $9^{\circ}\text{C}$

From 2pm to 11pm the temperature went down by  $15^{\circ}\text{C}$

- (b) Work out the temperature at 11pm

-12<sup>°C</sup>  
(2)

4.



- (a) Work out the output, when the input is 10.

22  
(1)

- (b) Work out the input, when the output is 13.

7  
(1)

- (c) If the input is the same as the output, work out the input.

4  
(1)



5. From the list of numbers

3    6    8    14    16    28    41    64

(a) write down the cube numbers

.....8..... and .....64.....  
(2)

(b) write down the cube root of 27.

.....3.....  
(1)

---

6. Thomas has a recipe for making Rice Krispie cakes.  
The recipe uses 120g of chocolate and 80g of Rice Krispies to make 12 cakes.

(a) How much chocolate should Thomas use to make 30 cakes?

$$\div 12 \quad \times 30$$

$$120 \div 12 = 10$$

$$10 \times 30$$

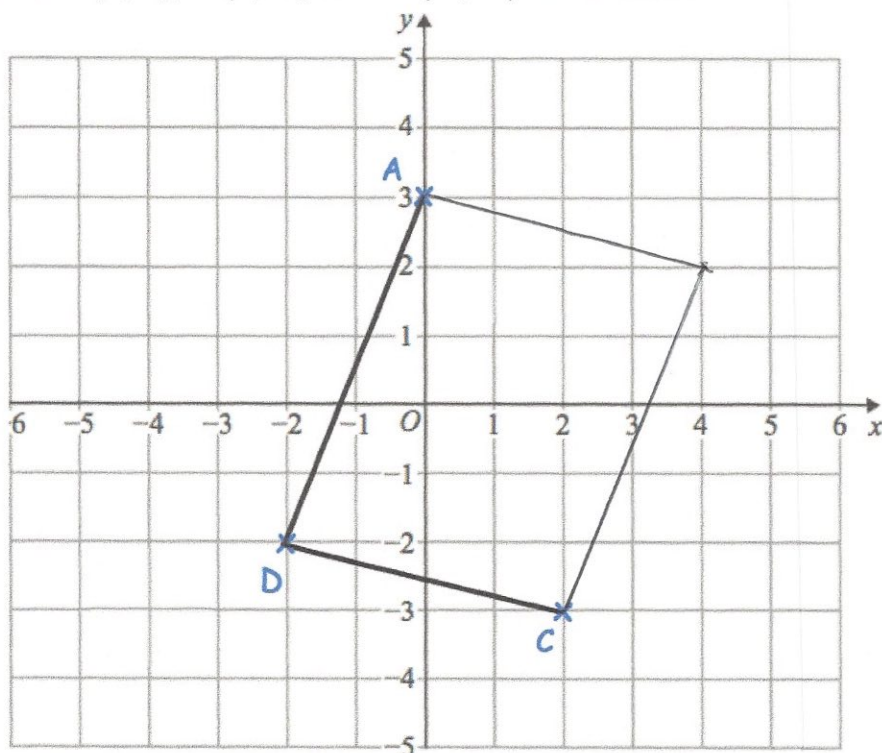
.....300.....g  
(2)

(b) What is 120g out of 200g expressed as a percentage?

$$\frac{120}{200}$$

.....60.....%  
(1)

7. The points A (0, 3), C (2, -3) and D (-2, -2) are shown.

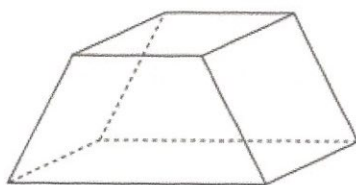


ABCD is a parallelogram.

Complete the parallelogram and write down the coordinates of B.

(4, 2)  
(2)

8. Below is a solid.



- (a) Write down the number of faces

6

(1)

- (b) Write down the number of vertices

8

(1)

8.9

Here is part of a timetable for a bus.

Southville	09 18	10 38	12 05
Leek	09 28	10 48	-----
Milton	09 41	11 01	-----
Newtown	09 49	11 09	-----
Red Island	09 55	11 15	12 36
Sandville	10 13	11 33	-----
Bakerstown	10 31	11 51	13 00

A bus leaves Southville at 10 38

(a) At what time should the bus arrive at Newtown?

11:09  
.....  
(1)

(b) How long will the journey take?

31  
.....minutes  
(1)

James arrives at the Milton bus stop at 09 29.  
He waits for the next bus to Red Island.

(c) (i) How many minutes should he wait?

12  
.....minutes  
(1)

(ii) At what time should James arrive at Red Island?

09:55  
.....  
(1)

Sally wants to travel from Southville to Bakerstown.  
The 12 05 is an 'express' bus.

(d) How many minutes shorter is the journey if she takes the 'express bus'?

18  
.....minutes  
(2)

Q. 10

Bilton				
23	Newtown			
28	30	Portsville		
23	11	32	Leek	
55	42	67	14	Castletown

The table above shows the distance in miles between some cities.

(a) Write down the distance between Bilton and Leek.

23  
..... miles  
(1)

James drives from Newtown to Castletown.  
He then drives from Castletown to Bilton.  
He then drives from Bilton to Leek.

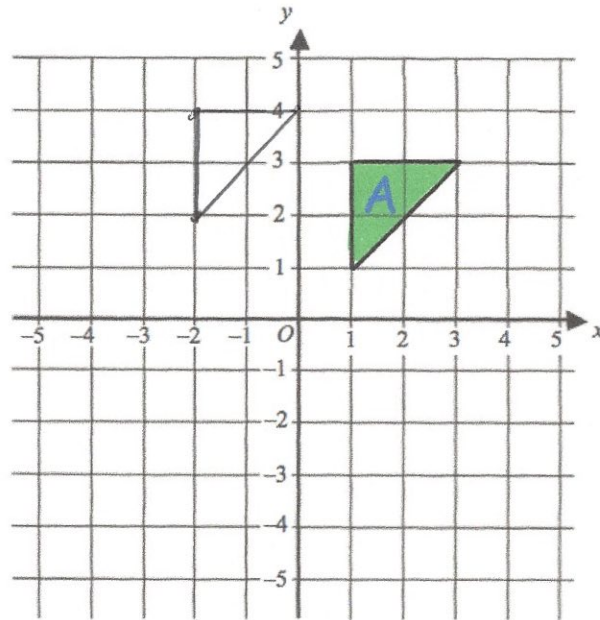
(b) Work out the total distance travelled.

23  
42  
55  
+  
-----

120  
..... miles  
(2)



11.

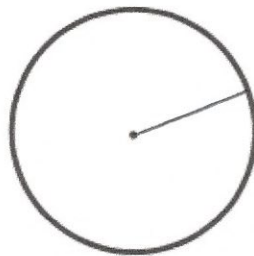


Translate triangle A by the vector  $\begin{pmatrix} -3 \\ 1 \end{pmatrix}$

(2)

12.

(a) Draw a radius on the circle.



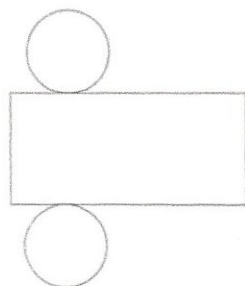
(1)

(b) Draw an arc on the circle.

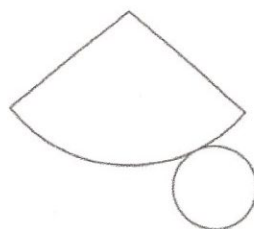


(1)

13. Below are the nets of two solid shapes.



A



B

- (a) Write down the shape that is made from Net A.

*Cylinder*  
.....  
(1)

- (b) Write down the shape that is made from Net B.

*Cone*  
.....  
(1)

14. William is going to attend a two day summer camp at his local leisure centre. He can take part in one activity on Monday and one activity on Tuesday.

Monday	Tuesday
Golf	Ice-skating
Football	Swimming
Rugby	Dodgeball
Hockey	Basketball

List all the possible combinations of activity he can take part in.

*GI GS GO GP FI FS FO FB*  
.....  
*RI RS RO RB MI MS MO MB*  
.....

(2)

15. In a theatre there are 29 rows and in each row there are 32 seats.  
Each ticket costs £19.75

Work out an estimate for the total income from ticket sales.

$$\approx 30 \times 30 = 900$$

$$900 \times 20$$

£18000  
(3)

- 
16. Megan says "when you square root a number, the answer is always smaller."

Show she is wrong.

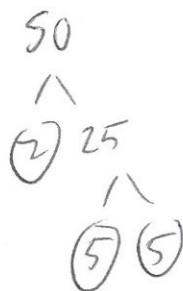
$$\sqrt{1} = 1$$

$$\sqrt{0} = 0$$

$$\sqrt{0.25} = 0.5$$

(2)

17. (a) Write 50 as a product of its prime factors.



$$2 \times 5 \times 5$$

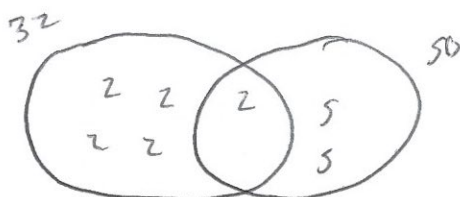
$$\text{or } 2 \times 5^2$$

(2)

- (b) Find the Lowest Common Multiple (LCM) of 32 and 50.

$$32 = 2 \times 2 \times 2 \times 2 \times 2$$

$$50 = 2 \times 5 \times 5$$



$$800$$

(2)

18. The angles in a triangle are in the ratio 1 : 2 : 9

What is the size of the largest angle?

$$1 + 2 + 9 = 12$$

$$180 \div 12 = 15$$

$$15 \times 9$$

$$135^\circ$$

(2)



19. The weight of a 2p coin is 7g.

Find the weight of £6 worth of 2p coins.  
Give your answer in kilograms.

$$600 \div 2 = 300$$

$$300 \times 7 = 2100g$$

2.1

.....kilograms  
(4)

20. Timothy asked 30 people how long it takes them to get to school.

The table shows some information about his results.

Time (t minutes)	Frequency
$0 < t \leq 10$	2
$10 < t \leq 20$	8
$20 < t \leq 30$	12
$30 < t \leq 40$	7
$40 < t \leq 50$	1

30

mp	fx
5	10
15	120
25	300
35	245
45	45
	<hr/>
	720

Work out an estimate for the mean time taken.

$$720 \div 30$$

24

.....minutes  
(4)

21. Chris and Molly win money in a competition.  
They share the money in the ratio 2 : 3  
Molly receives £240.

(a) How much money does Chris receive?

$$240 \div 3 = 80$$

$$80 \times 2 = 160$$

£ 160  
(2)

(b) How much money did they win in the competition?

£ 400  
(1)

22. Work out

$$10^{-2}$$

Give your answer as a decimal.

$$\frac{1}{10^2} = \frac{1}{100}$$

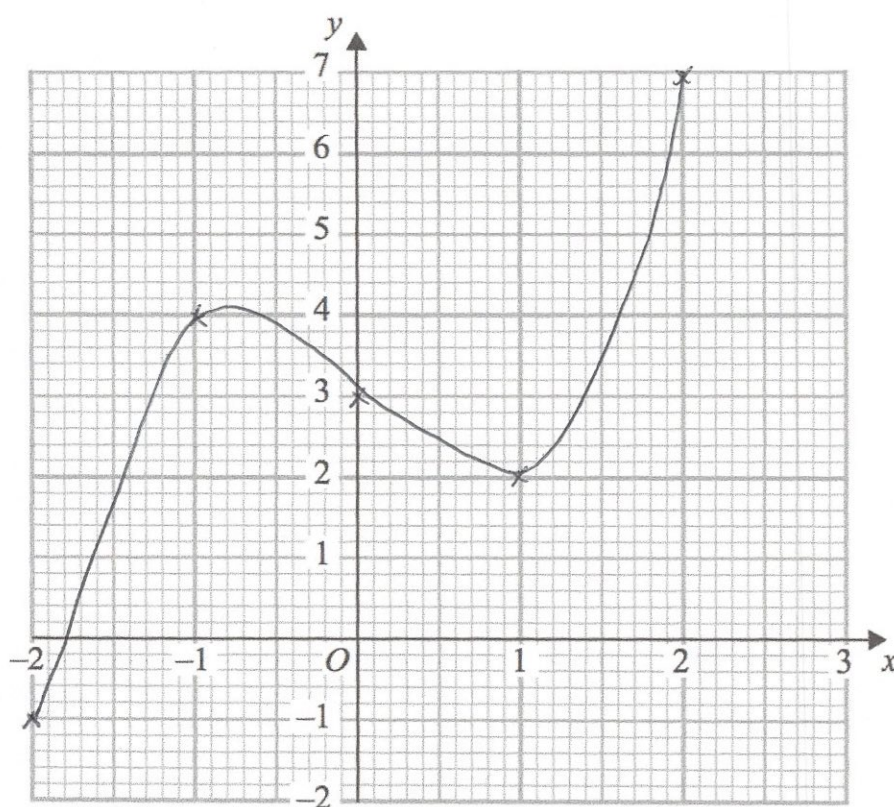
0.01  
(2)

26. (a) Complete the table of values for  $y = x^3 - 2x + 3$

x	-2	-1	0	1	2
y	-1	4	3	2	7

(2)

- (b) On the grid, draw the graph of  $y = x^3 - 2x + 3$  for the values of  $x$   $-2 \leq x \leq 2$



(2)

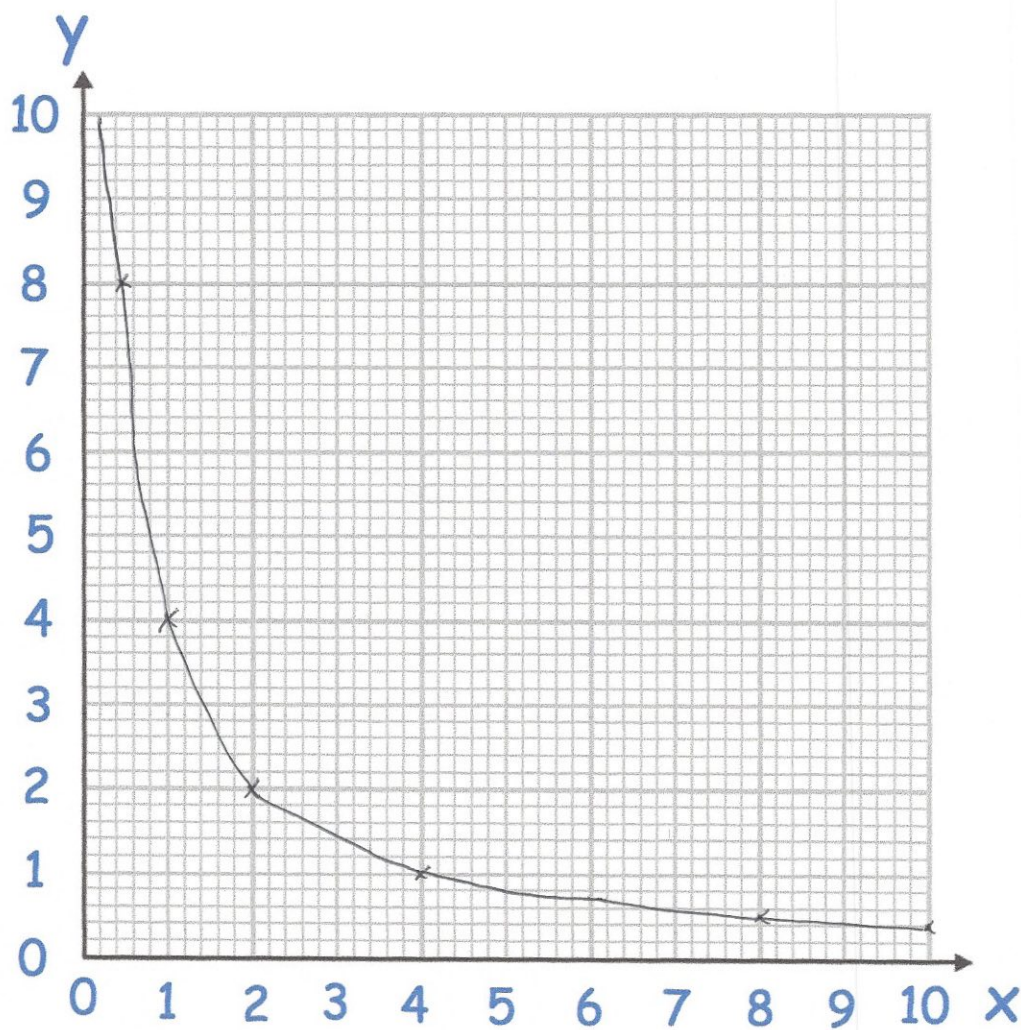
24

26. (a) Complete the table of value for  $y = \frac{4}{x}$

x	0.5	1	2	4	8	10
y	8	4	2	1	0.5	0.4

(2)

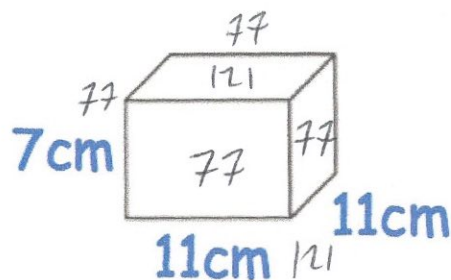
(b) On the grid, draw the graph of  $y = \frac{4}{x}$  for  $0.25 \leq x \leq 10$



(2)



25.



Work out the surface area of this cuboid.  
State the units of your answer.

$$550 \text{ cm}^2$$

(3)

26. Iron has a density of  $7.8 \text{ g/cm}^3$ .  
A solid iron statue has a mass of  $877.5 \text{ g}$ .  
Work out the volume of the statue.

$$V = \frac{m}{d} = \frac{877.5}{7.8}$$

$$112.5$$

$\text{cm}^3$

(2)

27.

A box is placed on the floor.

The area of the box in contact with the floor is  $2.4\text{m}^2$   
Pressure exerted on the floor  $16\text{ newtons/m}^2$

Work out the force exerted by the box on the floor.

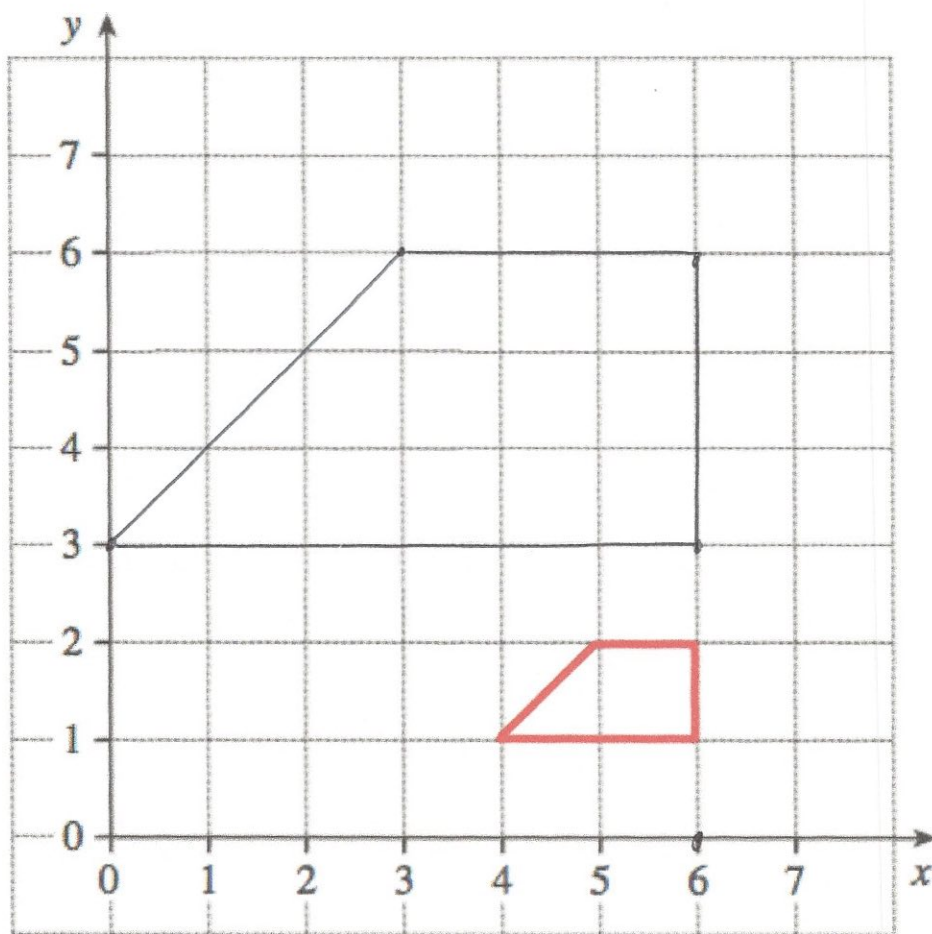
$$F = P \times A$$

$$16 \times 2.4$$

$$38.4$$

.....N  
(3)

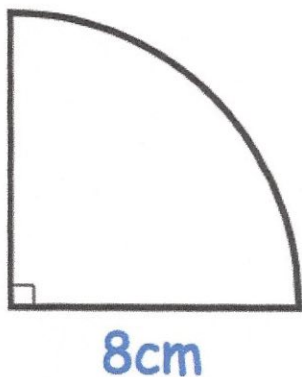
28  
37.



Enlarge the trapezium by scale factor 3, centre (6, 0).

(2)

29.



Calculate the perimeter of the sector.

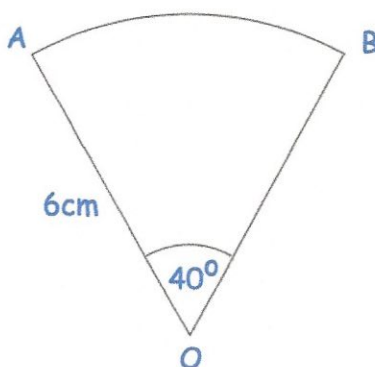
$$\frac{1}{4} \times \pi \times 16 = 12.566...$$

$$8 + 8 + 12.566...$$

$$\underline{28.57} \text{ cm}$$

(2)

30. OAB is a sector of a circle.



Find the area of the sector.

$$\frac{40}{360} \times \pi \times 6^2$$

$$\underline{12.57 \text{ cm}^2}$$

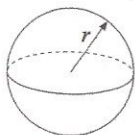
(3)



31. ~~Shown~~ is a sphere with radius ~~6~~ cm.

Shown is a sphere with radius 8 cm.

Surface area of sphere =  $4\pi r^2$



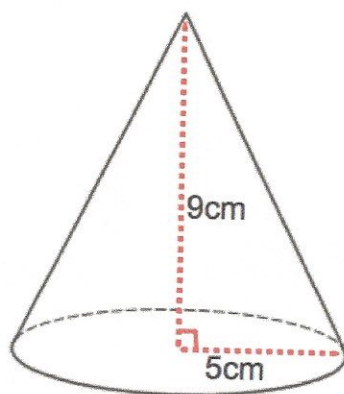
Calculate the surface area of the sphere.  
Give your answer to 1 decimal place.

$$4 \times \pi \times 8^2$$

$$\frac{804.24}{\dots\dots\dots} \text{cm}^2$$

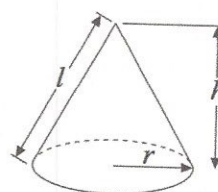
(3)

32. A cone has base radius 5 cm and perpendicular height 9 cm.



Volume of cone =  $\frac{1}{3}\pi r^2 h$

Curved surface area of cone =  $\pi r l$



Work out the volume of the cone.

$$\frac{1}{3} \times \pi \times 5^2 \times 9$$

$$\frac{235.62}{\dots\dots\dots} \text{cm}^3$$

(3)

33. Given  $a = \begin{pmatrix} 6 \\ -4 \end{pmatrix}$   $b = \begin{pmatrix} -2 \\ 1 \end{pmatrix}$

Work out  $2a + b$

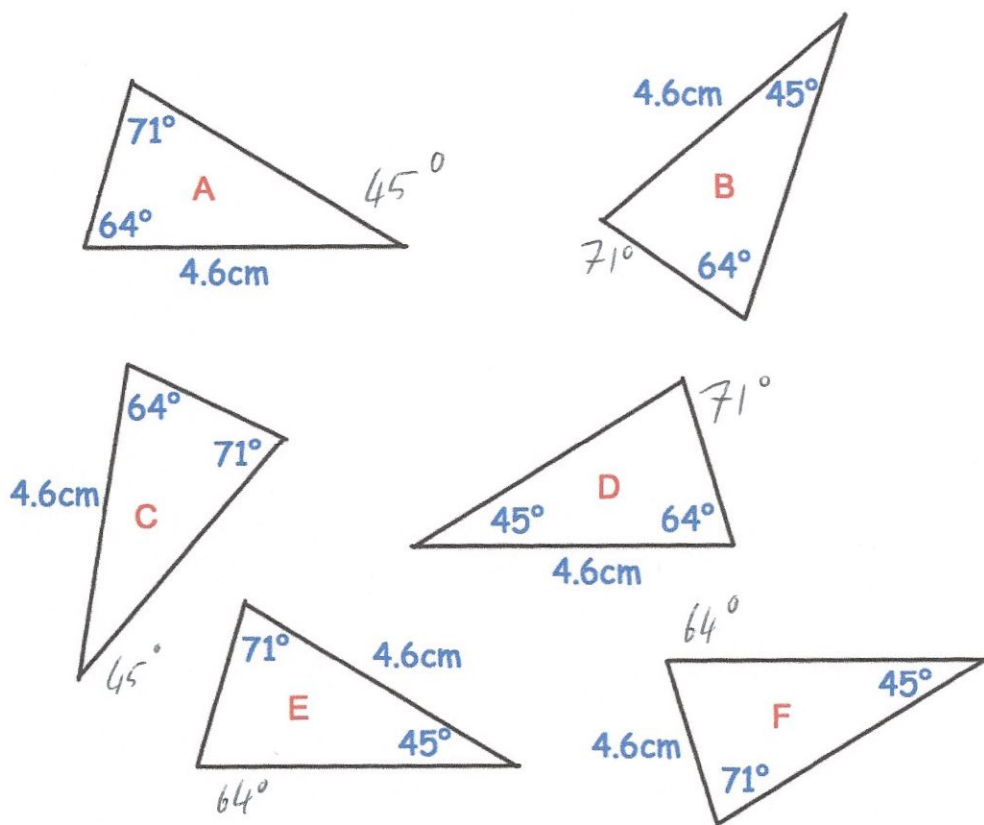
$$2a = \begin{pmatrix} 12 \\ -8 \end{pmatrix} \quad b = \begin{pmatrix} -2 \\ 1 \end{pmatrix}$$

$$\begin{pmatrix} 10 \\ -7 \end{pmatrix}$$

(3)

34.

Shown below are six triangles that are not drawn accurately.

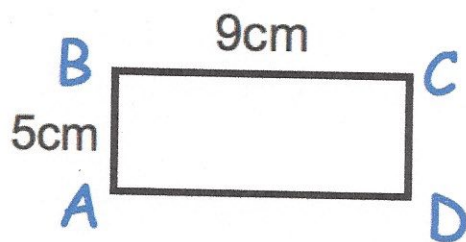


Which two triangles are congruent to triangle A?

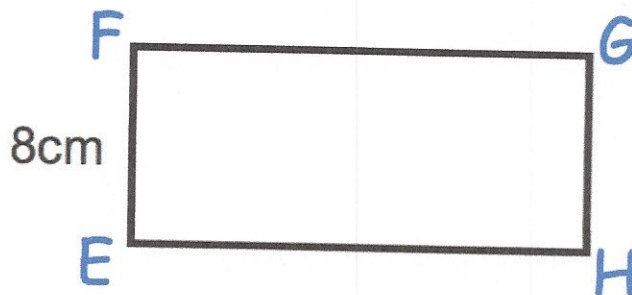
0 and C  
(2)

35

A4.



Not drawn accurately



Rectangles  $ABCD$  and  $EFGH$  are similar.

$$AB = 5\text{cm}$$

$$BC = 9\text{cm}$$

$$EF = 8\text{cm}$$

$$8 \div 5 = 1.6$$

Work out the length of  $FG$ .

$$9 \times 1.6$$

14.4

.....cm  
(2)

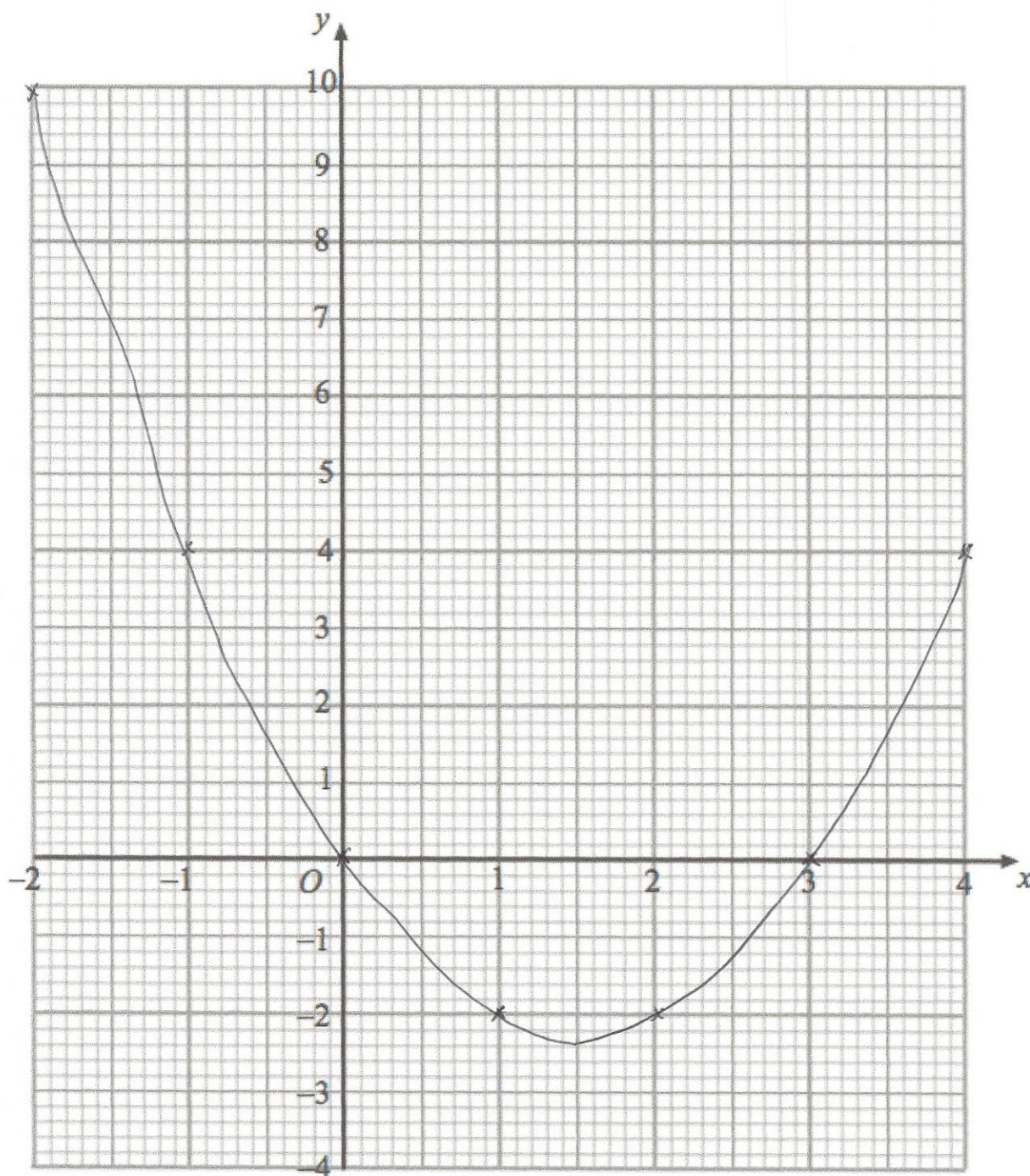
36

45. (a) Complete the table of values for  $y = x^2 - 3x$

$x$	-2	-1	0	1	2	3	4
$y$	10	4	0	-2	-2	0	4

(2)

(b) On the grid, draw the graph of  $y = x^2 - 3x$  for the values of  $x$  from -2 to 4.



(2)



37.

(a) Simplify

$$m^5 \times m^3$$

$$\frac{m^8}{\dots\dots\dots} \quad (1)$$

(b) Simplify

$$m^8 \div m^2$$

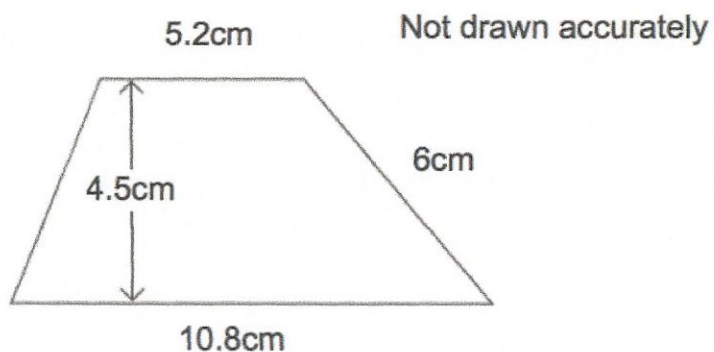
$$\frac{m^6}{\dots\dots\dots} \quad (1)$$

(c) Simplify

$$(m^3)^2$$

$$\frac{m^6}{\dots\dots\dots} \quad (1)$$

38.



$$\frac{1}{2} (5.2 + 10.8) \times 4.5$$

Calculate the area of the trapezium.

$$\frac{36}{\dots\dots\dots} \text{cm}^2 \quad (2)$$