BUMPER "BETWEEN PAPERS" PRACTICE

SUITABLE FOR HIGHER AND FOUNDATION TIER

Summer 2019
QUESTIONS

Not A "best" Guess paper.

Neither is it a "prediction" ... only the examiners know what is going to come up! Fact!
You also need to REMEMBER that just because a topic came up on paper 1 it may still come up on papers 2 or 3 ...

We know how important it is to Practice, practice, practice .... so we've collated a load of questions that weren't examined in the AQA 9-1 GCSE Maths paper 1 but we cannot guarantee how a topic will be examined in the next papers ...

Enjoy!
Mel & Seager

1. How many grams are there in 2.5 kilograms? Circle your answer.

[1]

<div align="center">

0.0025   250   2005   2500

</div>

2. What is the value of the digit 7 in 3.72? Circle your answer.

[1]

<div align="center">

$\frac{1}{70}$ $\frac{7}{10}$ 7 $\frac{1}{00}$

</div>

3. Which of $\frac{2}{5}$ or $\frac{5}{8}$ is closer in value to $\frac{1}{2}$? You must show your working.

[3]

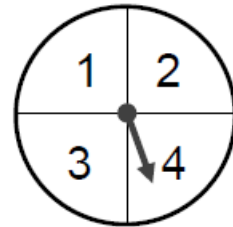4. Which of these is not used to prove that triangles are congruent?

   Circle your answer.

<div align="center">

SSS   SAS   AAA   RHS

</div>

5. A game is played with a fair spinner.

   The player spins the spinner twice.
   The score is the difference between the two numbers.

(a) Complete the table to show the scores.

First spin

		1	2	3	4
	1			2	
Second	2				
spin	3	2			
	4				

[2]

(b)   The player loses if the score is 0 or 1
       The player wins if the score is 2 or 3
       Amy says: "Two scores win and two scores lose, so the chance of winning is evens."
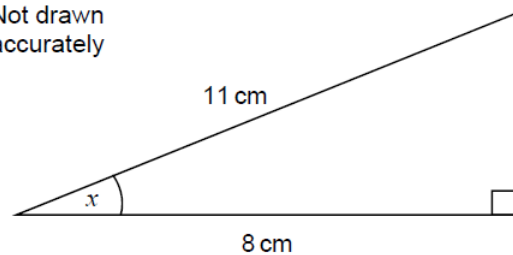   Is Amy correct?   Tick the correct answer

<div align="center">

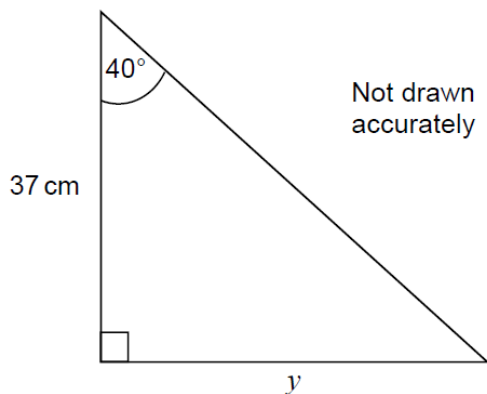Yes   No

</div>

       Give a reason for your answer.

[2]

6. a) Work out the size of angle x.

Not drawn accurately

11 cm

x

8 cm

[2]

(b) Work out length y.

40°

Not drawn accurately

37 cm

y

[2]

7. A, B and C are three vertices of a quadrilateral plotted on a centimetre grid.

a) Plot D on the grid so that ABCD is a rectangle.

[1]

b) E is the midpoint of BC.

Circle the two answers that describe triangle ABE.

Scalene   isosceles

equilateral   right-angled

[2]

c) Circle the ratio

area of triangle ABE : area of rectangle ABCD
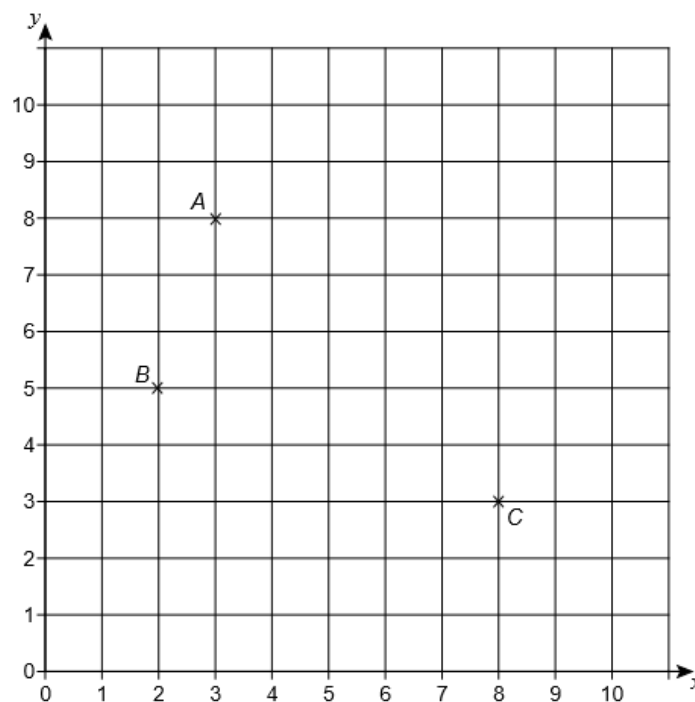
1 : 2   1 : 3   1 : 4   1 : 8

[1]

8. Here are two column vectors.

$$f = \begin{pmatrix} 4 \\ 5 \end{pmatrix} \quad g = \begin{pmatrix} 5 \\ -2 \end{pmatrix}$$

Work out 3f - 2g

[2]

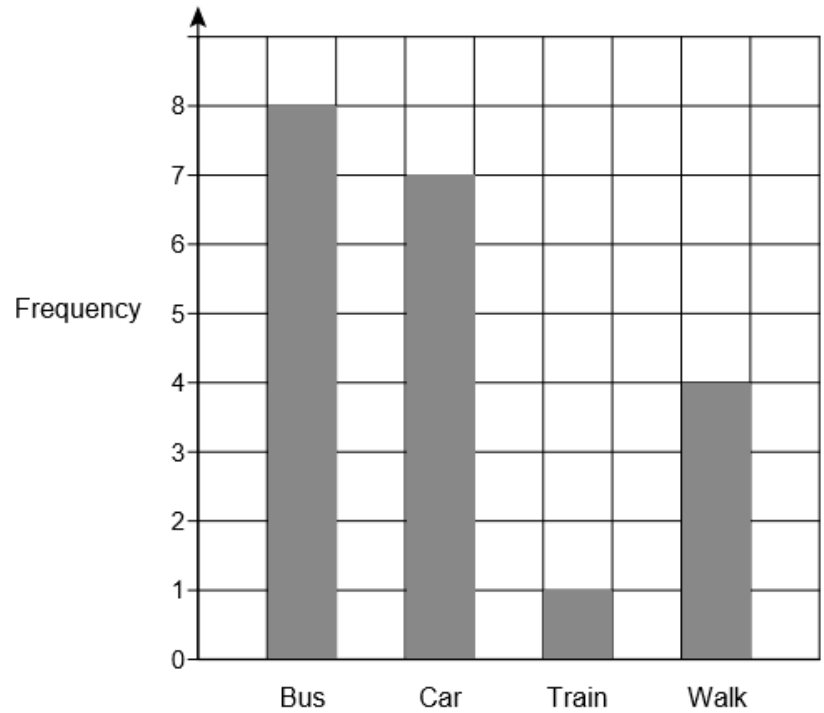9. Work out   25.8 + 12.6 ÷ 2

[2]

10. The bar chart shows information about how 20 students travel to school.

Show the information in a pictogram.

Use the key given.

[3]

Key : ◯ represents 2 students

Bus	
Car	
Train	
Walk	

11. Work out 81 as a power of 3   Circle your answer.

$$3^3 \qquad\qquad 3^4 \qquad\qquad 3^5 \qquad\qquad 3^6$$

[1]

12. Work out $2\frac{3}{4} \times 1\frac{5}{7}$

Give your answer as a mixed number in its simplest form.

[3]

13. Which statement is true? Circle your answer.

–6 is greater than –2   –6 is greater than 2

–2 is greater than –6   –2 is greater than 6

[1]

14. Write 280 as a product of its prime factors.

[2]

15 In a sale, the original price of a bag was reduced by $\frac{1}{5}$

The sale price of the bag is £29.40

Work out the original price.

[3]

16. Toilet rolls come in packs of 4 and 9

Which pack is better value?
You must show your working.

Our Brand
4
Toilet rolls
£1.89

Our Brand
9
Toilet rolls
£3.99

[3]

17. The scale on a map is 1 : 200 000

Work out the number of kilometres represented by 2.5 cm on the map.

[2]

18. Here are the instructions on a bottle of fruit squash.

To make fizzy juice
mix 2 parts fruit squash
with 7 parts lemonade

a) How much fruit squash is needed to make 450 ml of fizzy juice?

[2]

b) Tom has 80 ml of fruit squash.   He also has 210 ml of lemonade.

What is the maximum amount of fizzy juice he can make?

[3]

19. £800 is invested for 3 years at 2% simple interest per year.

Work out the total interest.

[3]

20. (a) Use your calculator to work out $19.42^2 - \sqrt[3]{1006} \div 4.95$

Write down your full calculator display.

[1]

(b) Use approximations to check that your answer to part (a) is sensible.

You must show your working.

[2]

21. Here are four numbers.

$$0.43 \qquad \frac{3}{7} \qquad 43.8\% \qquad \frac{7}{16}$$

Write these numbers in order of size.

Start with the smallest number.

[2]

22. 120 men and 80 women were asked if they drive to work.

Altogether $\frac{1}{4}$ of the people said yes.

$\frac{1}{3}$ of the men said yes.

What fraction of the women said yes?

[4]

23. In Scotland, squirrels are red or grey in the ratio red : grey = $1 : 2\frac{1}{2}$

What fraction of the squirrels in Scotland are red?

[2]

24. Circle the expression that can be written as $2y^2$

[1]

$(2y)^2$ $2 \times 2 \times y$ $2 \times y \times y$ $2 \times 2 \times y \times y$

25. Simplify $7a + 5b + 3a - 2b$

[2]

26. Here is a formula. $V = \frac{1}{2} x^2 h$

Work out the value of V when x = 11 and h = 6

[2]

27. Solve 12x = 3 Circle your answer.

[1]

x = -9 $x = \frac{1}{4}$ x = 4 x = 36

28. A drink is mixed in the ratio   lemonade : orange : cranberry = 6 : 3 : 2
What fraction is orange? Circle your answer.

[1]

$\frac{3}{8}$ $\frac{2}{11}$ $\frac{3}{11}$ $\frac{1}{2}$

29. There are 25 counters in a bag. 12 are red, 5 are green and the rest are white.
A counter is chosen at random.   Work out the probability that it is white.
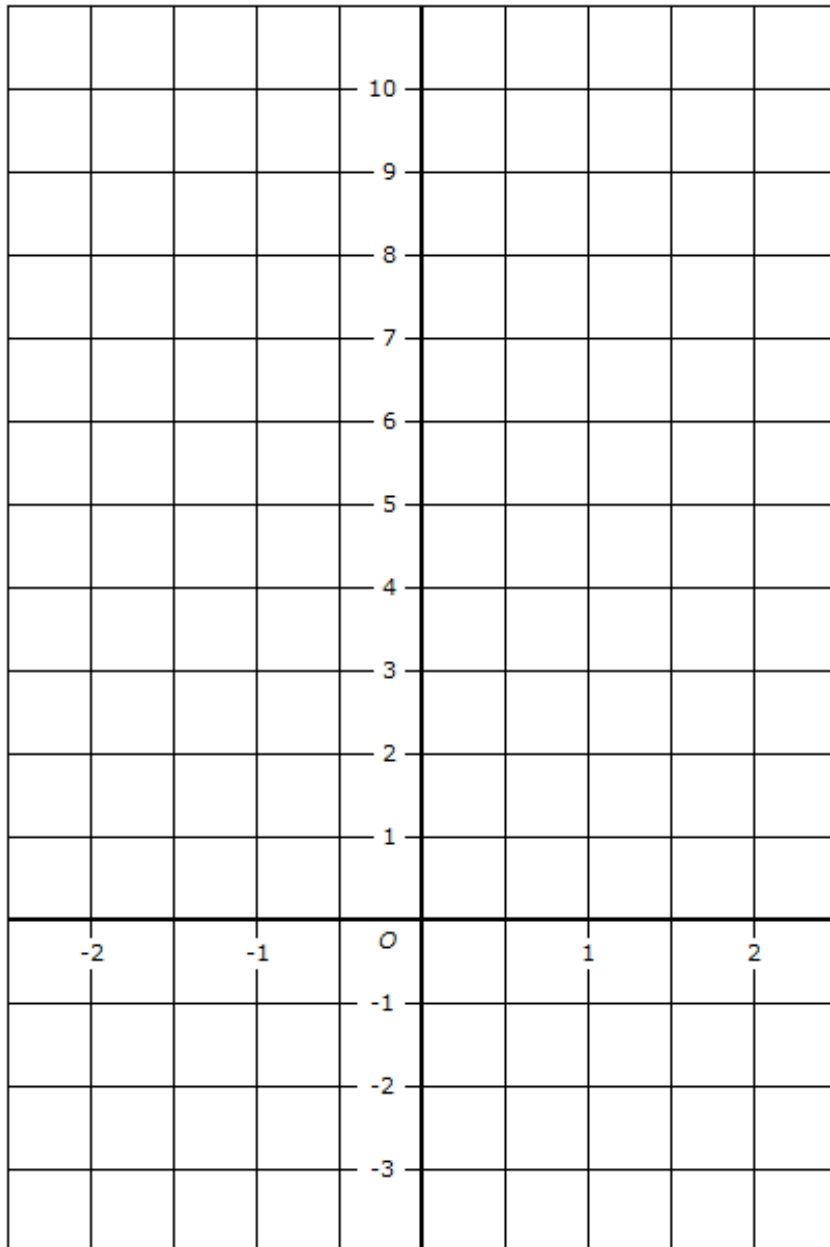
[2]

30. a. Complete the table of values for $y = 3x + 4$

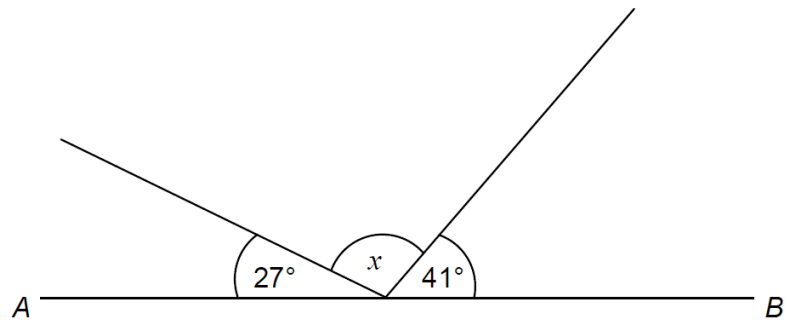| x	-2	-1	0	1	2
y		1			10

[2]

(b) On the grid, draw the graph of $y = 3x + 4$

[2]

31. AB is a straight line. Work out the size of angle x.

Not drawn accurately

27° x 41°

A ——————————————————— B

[2]

32. The scatter graph shows the number of driving lessons and the number of tests needed to pass by 10 people.

Number of tests needed to pass

Number of driving lessons
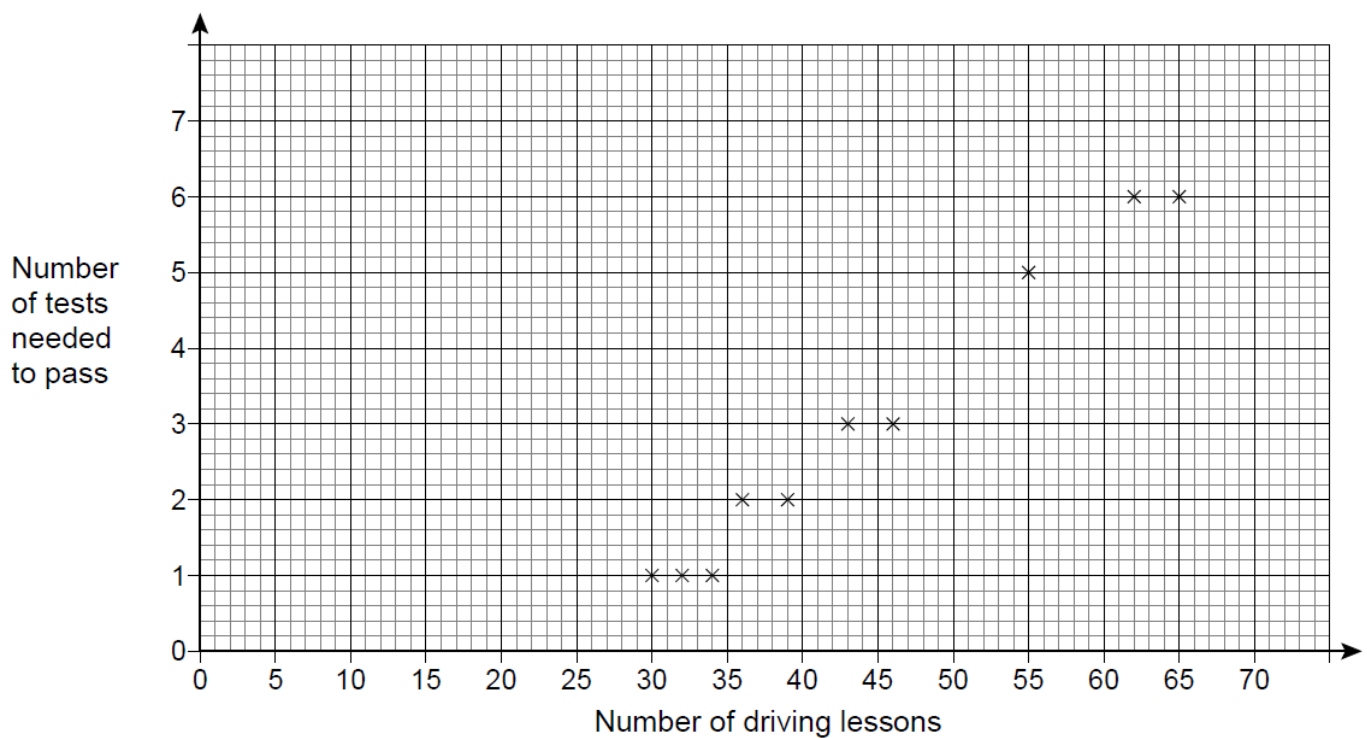
(a) Describe the correlation. Circle your answer.

[1]

strong positive   weak positive   weak negative   strong negative

(b) Use a line of best fit to estimate the number of tests needed to pass by a person who has 50 lessons.

[2]

(c) Meera says: "I can use the trend to predict the number of driving tests needed to pass for any number of driving lessons."
Comment on her statement.

[1]

33. $2x + 3y = 15.5$
     $x + y = 6$
     Work out the values of x and y.

[3]

34 A cinema has:
     37 rows of seats
     23 seats in each row.
     Adult tickets are £8 each.
     Child tickets are £6 each
     The cinema has sold tickets for every seat.
     The manager estimates that £6400 was raised from these tickets.
     200 child tickets were sold.
Check whether the manager's estimate was close to the exact amount of money raised.

[6]

35. Here is a map of France.

Scale: 1 cm represents 80 km
(a) What is the three-figure bearing of Lyon from Bordeaux? Circle your answer.

[1]

005°   085°   095°   175°

(b) Work out the actual straight-line distance from Paris to Marseille.

[2]

36. Which symbol makes this statement correct?

$$0.062 _____ 0.52$$

Circle your answer.

[1]

$$=$$ $$<$$ $$>$$ $$\geqslant$$

37. a) Solve the inequality $\frac{3x}{2} \leq 9$
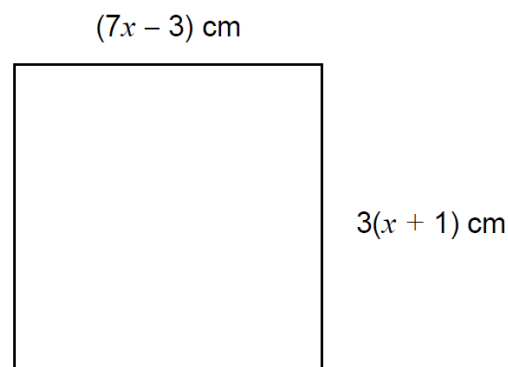
[2]

b) Solve the inequality $4(x+2) > 12$

[2]

c) Represent the solution set that satisfies both answers to parts (a) and (b) on the number line.
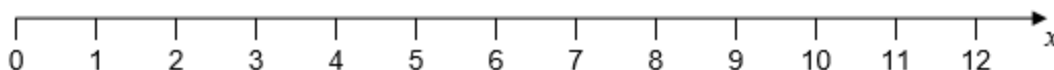
[1]

38. The diagram shows a square.

Work out the length of one side of the square.

$(7x - 3)$ cm

$3(x + 1)$ cm

[4]

39. Factorise $x^2 - y^2$

[1]

40 (a) Factorise fully $9a^2 - 6a$

[2]

(b) Solve $x^2 - 12x + 20 = 0$

[3]

41 (a) Translate the triangle so that point A moves to point B.

[1]
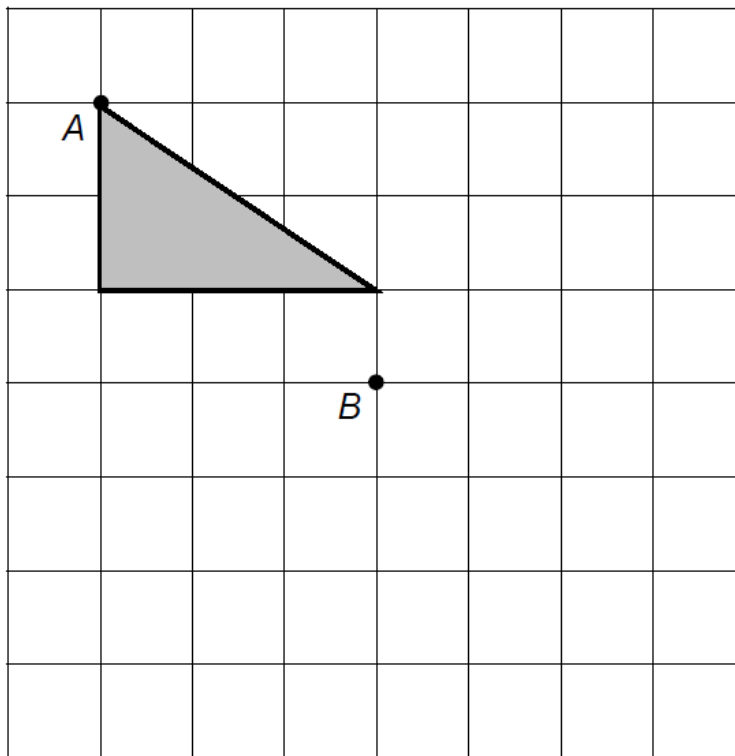
(b) Rotate the triangle 90° clockwise so that point C moves to point D.
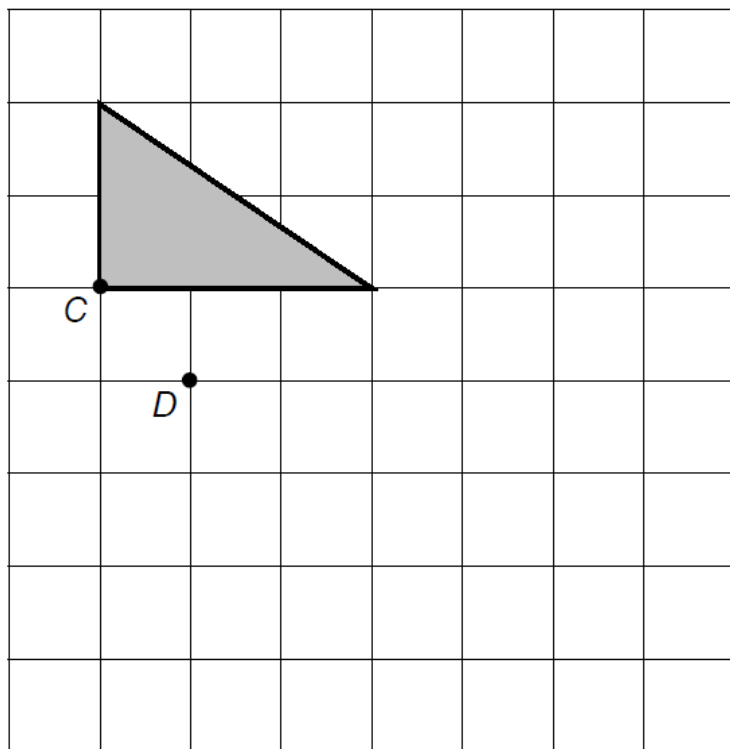
[2]

42. Factorise $15x + 35y - 40z$

[1]

43. A square has an area of $100\ cm^2$.

Find its perimeter.

[2]

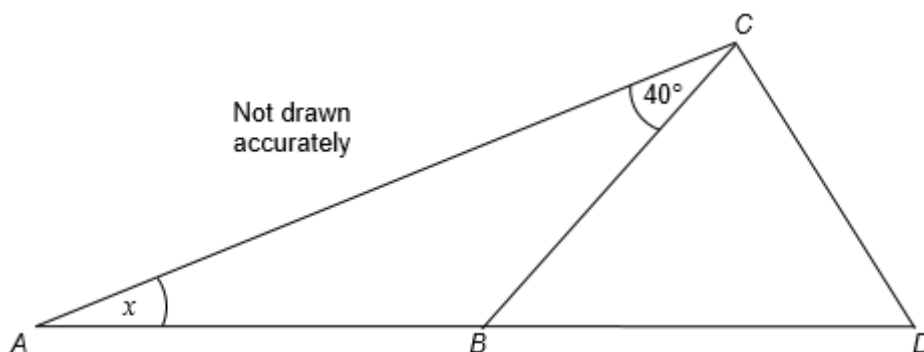44. Circle the equation with roots 4 and -8

$$4x(x - 8) = 0 \qquad\qquad (x - 4)(x + 8) = 0$$

$$x^2 - 32 = 0 \qquad\qquad (x + 4)(x - 8) = 0$$

[1]

45. The diagram shows a triangle ACD and an equilateral triangle BCD.

Not drawn accurately

Work out the size of angle x.

[2]

46. In the diagram the area of triangle ABD is $56\ cm^2$ Work out the length of CD.

Not drawn accurately

14 cm   6 cm
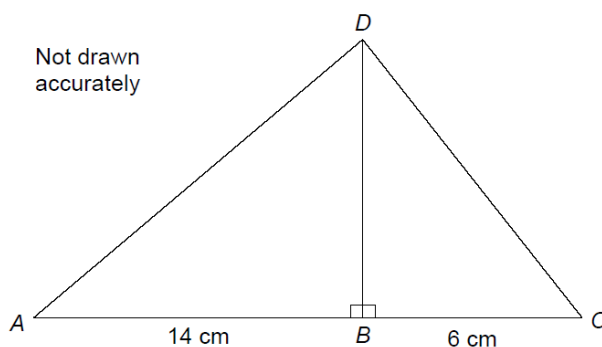
[4]

47. The graph $y = a + bx - x^2$ is shown.
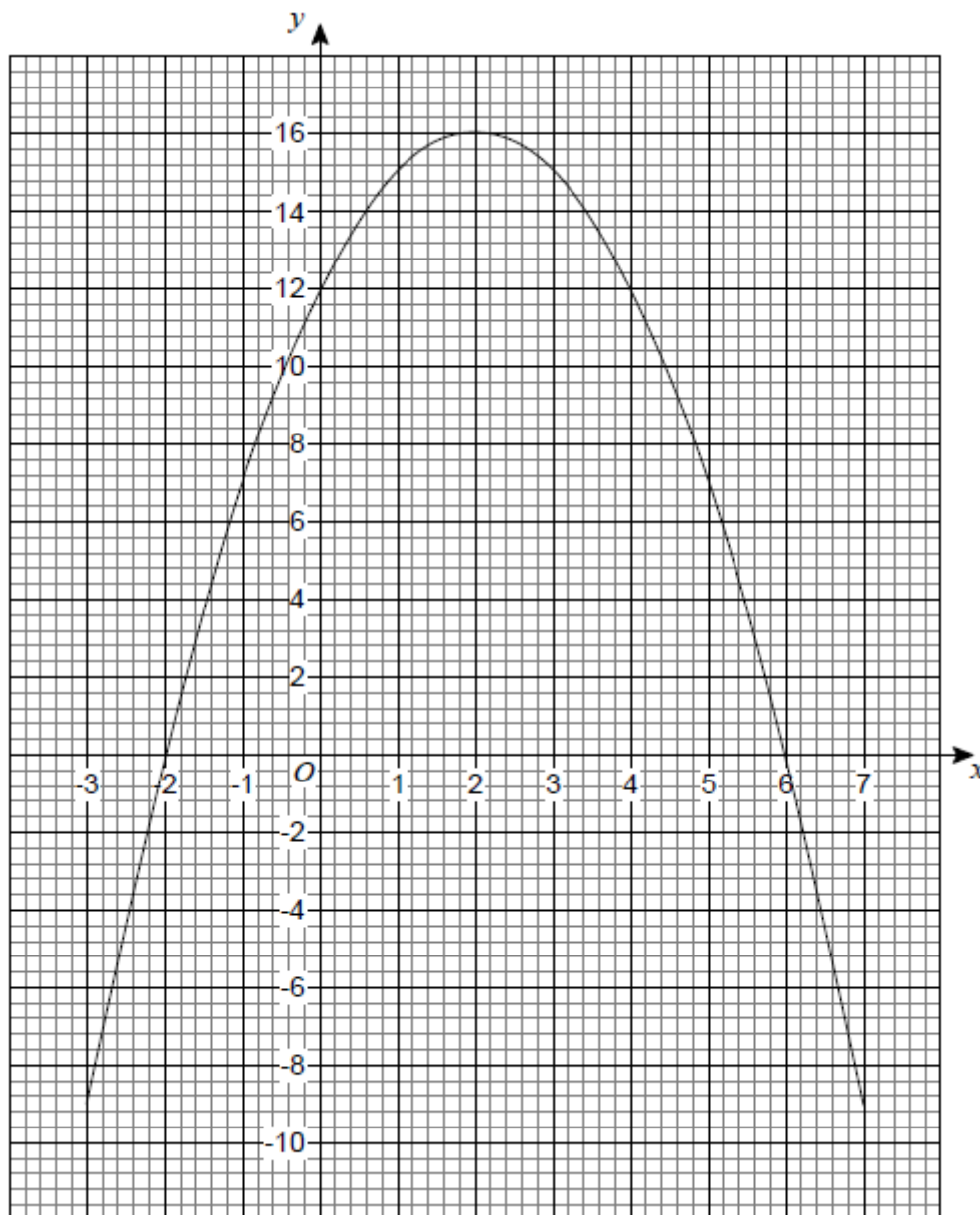
(a) Circle the coordinates of the turning point of the curve.

(-2, 0)   (0, 12)   (2, 16)   (6, 0)

[1]

(b) Circle the value of a.

[1]

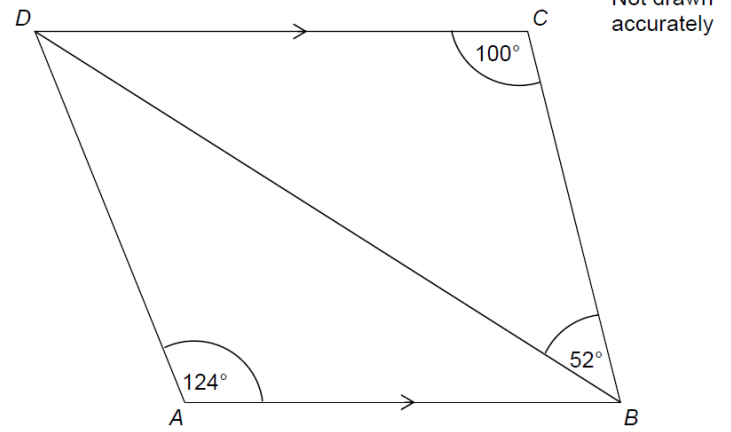-2   12   16   6

(c) Circle the two roots of $a + bx - x^2 = 0$

-2 and 6   2 and -6   2 and 6   -2 and -6
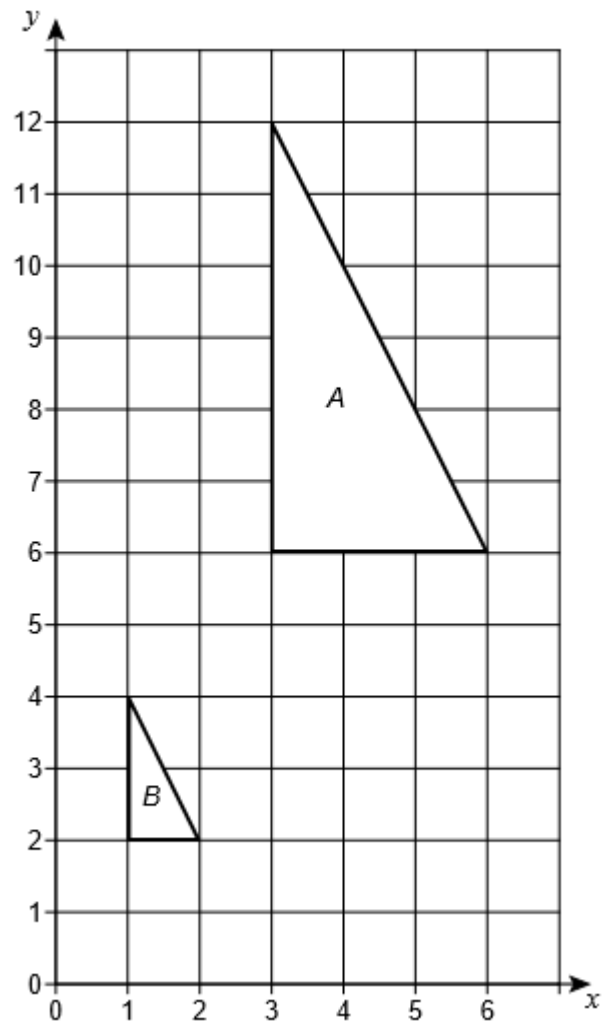
[1]

48. In the diagram, DC is parallel to AB.

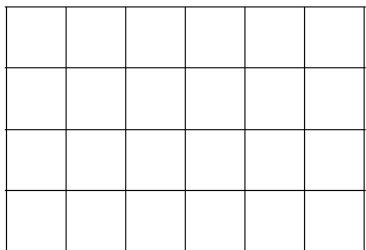Show that triangle ABD is isosceles.

[3]

Not drawn accurately

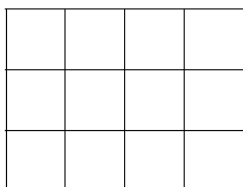**49.** Describe fully the single transformation that maps triangle A to triangle B.

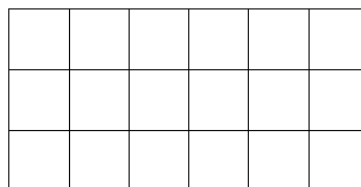[3]

50. A solid cuboid is made from centimetre cubes.

The plan view, front elevation and side elevation are shown.

Plan view

Front elevation

Side elevation

How many centimetre cubes were used to make the cuboid?

[2]