

Name: Answers

GCSE 9-1 Foundation  
Practice Paper  
Set C  
Paper 1 - Non Calculator



### Equipment

1. A black ink ball-point pen.
2. A pencil.
3. An eraser.
4. A ruler.
5. A pair of compasses.
6. A protractor.

### Guidance

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

### Information

1. Time: 1 hour 30 minutes
2. The maximum mark for this paper is 80.
3. The marks for questions are shown in brackets
4. You may use tracing paper.

Question	Mark	Available
1		1
2		2
3		1
4		1
5		1
6		3
7		3
8		2
9		4
10		4
11		2
12		3
13		4
14		3
15		3
16		6
17		3
18		3
19		4
20		3
21		2
22		4
23		4
24		2
25		2
26		4
27		4
28		2
Total		80

1. Write 3385 correct to the nearest hundred.

3400

(1)

2. (a) Write the following numbers in order of size.  
Start with the smallest number.

9    -10    3    0    -4    7

-10, -4, 0, 3, 7, 9

(1)

- (b) Write the following numbers in order of size.  
Start with the smallest number.

0.500    0.140    0.092    0.330

0.092, 0.14, 0.33, 0.5

(1)

3. Write  $\frac{4}{5}$  as a percentage.

$$\frac{4}{5} = \frac{8}{10}$$

80%

(1)

4. Two of the fractions are equivalent

$$\frac{2}{3} \quad \frac{12}{15} \quad \frac{9}{12} \quad \frac{16}{20} \quad \frac{6}{10}$$

$\downarrow$        $\downarrow$        $\downarrow$        $\downarrow$

$$\frac{4}{5} \quad \frac{3}{4} \quad \frac{4}{5} \quad \frac{3}{5}$$

Circle the equivalent fractions.

(1)

5. Write down the multiples of 7 between 30 and 50

35, 42

(1)

6. (a) Simplify  $8y \times 3x$

24xy

(1)

- (b) Simplify  $2c - 3y + c + 5y$

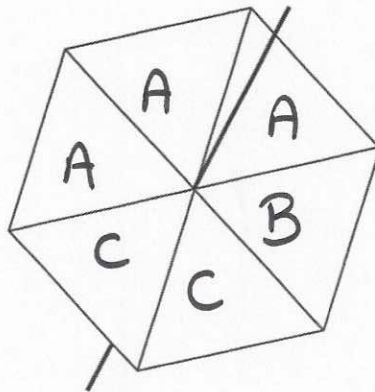
3c + 2y

(2)

7. Megan has a fair 6 sided spinner.  
The spinner has the letters A, B and C on it.

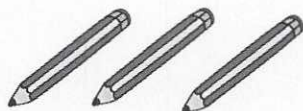
The probability that the spinner will land on an A is  $\frac{1}{2}$

The probability that the spinner will land on a C is  $\frac{1}{3}$



Write the letters on the spinner.

8. Emily buys 3 pencils for 51p



Work out the price of 4 pencils.

$$51 \div 3 = 17 \text{ p for 1 pencil}$$

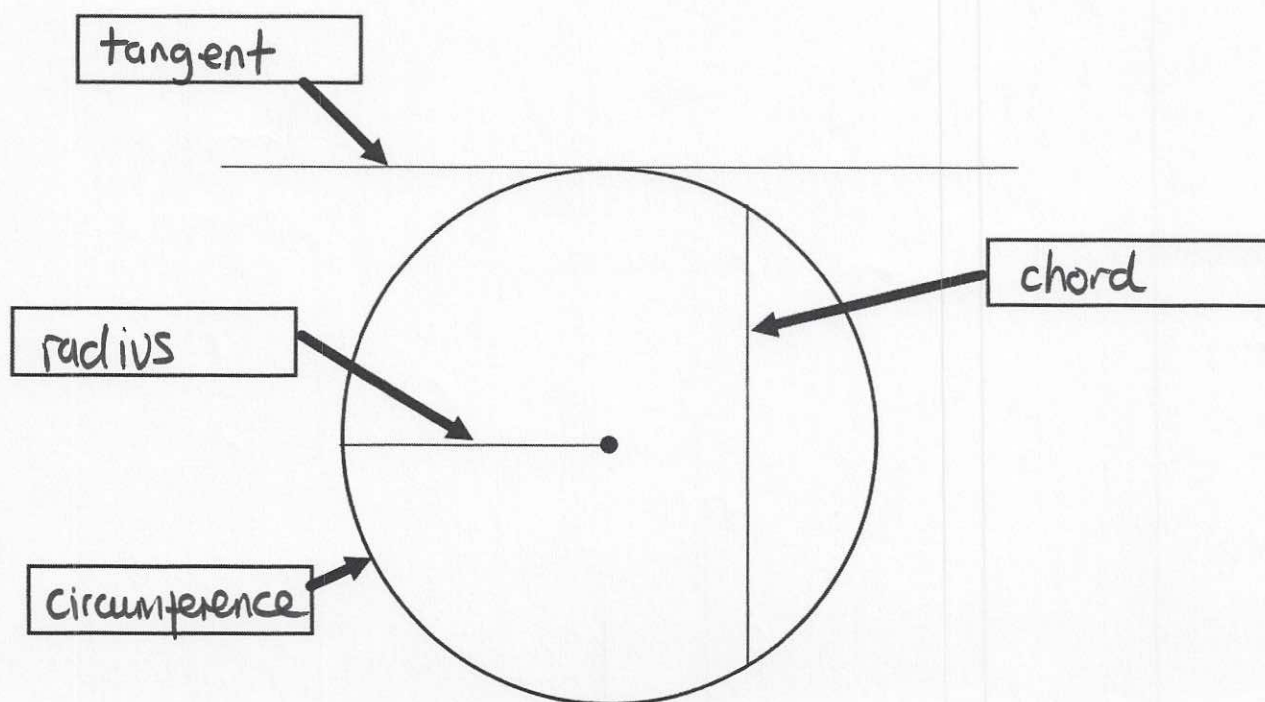
$$17 \times 4 = 68$$

68p .....p  
(2)

9. Here is a list of words connected to circles.

Tangent      Radius      Diameter      Chord      Centre      Circumference

Label the four boxes in the diagram below, by choosing the correct word from the list.



(4)



10. Orla is planning a trip for her friends

Here are the costs for the trip.

Entry fee	£17 per person
Transport	£320
Insurance	£90
Other costs	£80

Orla charges £21 per person for the trip.  
100 people go on the trip.

Has Orla collected enough money to pay for all the costs of the trip?  
You must show your working.

$$100 \times 21 = \pounds 2100$$

$$\begin{array}{r} 17 \times 100 = \pounds 1700 \\ + \quad \quad 320 \\ \quad \quad 90 \\ \quad \quad 80 \\ \hline \pounds 2,190 \end{array}$$

she hasn't collected enough

11. Xavier says "all numbers greater than 1 have an even number of factors."

Show Xavier is incorrect.

for example:

4 has 3 factors (1, 2, 4)

(this is true of any square number)

(2)

- 
12. Miss Thomas has 4 litres of orange juice.

She drinks 300ml and then pours cups of orange juice for the students.

Miss Thomas wants to pour as many 150ml cups of orange juice as possible.

Work out how many 150ml cups of orange she can pour.

$$4\text{ L} = 4000\text{ mL}$$

$$4000 - 300 = 3700\text{ mL}$$

$$\begin{array}{r} 20 \times 150 = 3000 \\ 4 \times 150 = 600 \end{array}$$

$$\therefore 24 \times 150 = 3600$$

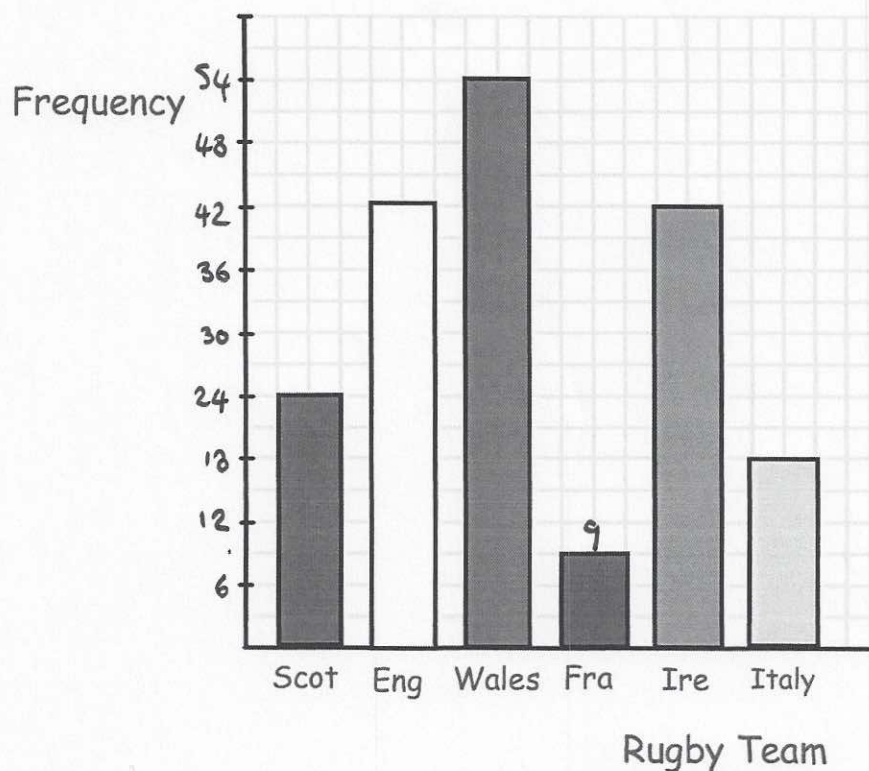
(with only 100 mL left)

24

(3)

13. Tom has asked his friends which country they support in the Six Nations. He has shown the results in a bar chart.

The bar chart is accurately drawn, but Tom has forgotten to label the frequencies. Tom does remember that 9 people supported France.



Find the missing frequencies.

Rugby Team	Frequency
Scotland	24
England	42
Wales	54
France	9
Ireland	42
Italy	18



14. Riley and Lily each have a box of blue pens and black pens.  
The both have the same total number of pens.

In Riley's box, the ratio of blue pens to black pens is 3:5

In Lily's box, 40% of the pens are blue.

Work out who has the most black pens.

You must show your working.

Lily's ratio is  $40:60 = 2:3$   
Riley  $3:5$

Lily has  $\frac{3}{5}$  black = 0.6

Riley has  $\frac{5}{8}$  black = 0.625

Riley.....  
(3)

15. Which is larger?

35% of 180 or  $\frac{1}{20}$  of 1200

10%  $\rightarrow$  18

30%  $\rightarrow$  54

5%  $\rightarrow$  9 +

35% = 63

$\frac{1200}{20} = 60$

35% of 180.....  
(3)

16.  $W = 6a - 2b$

$$a = 3$$

$$b = -7$$

(a) Work out the value of  $W$

$$6 \times 3 - 2 \times -7 = 18 + 14 = 32$$

.....  
(2)

(b) Expand  $3x(5 - x)$

$$15x - 3x^2$$

.....  
(2)

(c) Solve  $5y - 7 = 3y + 10$

$\xleftarrow{-3y}$

$$2y - 7 = 10$$

$$2y = 17$$

$$y = \frac{17}{2}$$

$$y = 8.5$$

.....  
(2)

17. Geraint has 2p and 50p coins in the ratio 20 : 3

Write the ratio of the value of the 2p coins to the value of 50p coins in its simplest form.

$$20 \times 2p = 40p$$

$$50 \times 3 = 150p$$

$$40 : 150 =$$

$$4 : 15$$

(3)

- 
18.  $A = \{\text{square numbers between 5 and 50}\}$   
 $B = \{\text{multiples of 3 between 5 and 50}\}$   
 $C = \{\text{multiples of 4 between 5 and 50}\}$

(a) List the members of A

$$9, 16, 25, 36, 49$$

(1)

(b) List the members of  $B \cap C$

$$B \cap C = \{\text{all multiples of 12 between 5 and 50}\}$$

$$12, 24, 36, 48$$

(2)

19. (a) Work out  $3\frac{1}{2} - 2\frac{5}{9}$

$$\frac{7}{2} - \frac{23}{9}$$

$$= \frac{7 \times 9 - 23 \times 2}{18} = \frac{63 - 46}{18} = \frac{17}{18}$$

.....  
(2)

(b) Work out  $1\frac{2}{3} \div 2\frac{1}{4}$

$$\frac{5}{3} \div \frac{9}{4} =$$

$$\frac{5}{3} \times \frac{4}{9} =$$

$$\frac{20}{27}$$

.....  
(2)

20. In a survey, the ratio of the number of people who preferred tea to those who preferred coffee was 9:5

36 more people preferred tea to coffee.

Work out how many people took part in the survey.

$$9 - 5 = 4$$

$$36 \div 4 = 9$$

$$9 \times 9 = 81$$

$$9 \times 5 = 45 \quad +$$

$$\underline{126}$$

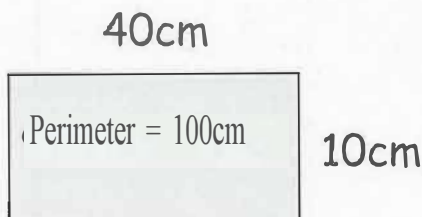
126

(3)

21. ABCD is a rectangle with length 40cm and width 10cm.

$$40 + 40 + 10 + 10$$

$$= 100\text{cm}$$



The length of the rectangle is decreased by 40%.

The width of the rectangle is decreased by 20%

Find the percentage decrease in the perimeter of the rectangle.

length

Width

$$10\% \text{ of } 40 = 4$$

$$10\% \text{ of } 10 = 1$$

$$40\% \text{ of } 40 = 16$$

$$20\% \text{ of } 10 = 2$$

$$40 - 16 = 24$$

$$10 - 2 = 8$$

$$24 + 8 + 24 + 8 = 64\text{cm}$$

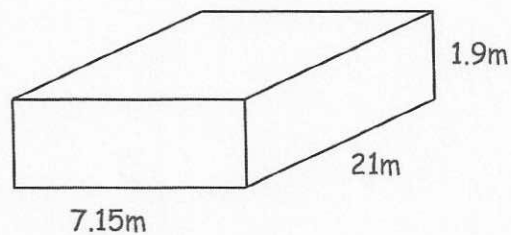
$$100 - 64 = 36$$

$$\frac{36}{100} = 36\%$$

(2)



22. Andrew is going to fill an empty swimming pool.



Andrew fills the swimming pool with water at a constant rate of 4000 litres per minute.

Given  $1\text{m}^3 = 1000$  litres

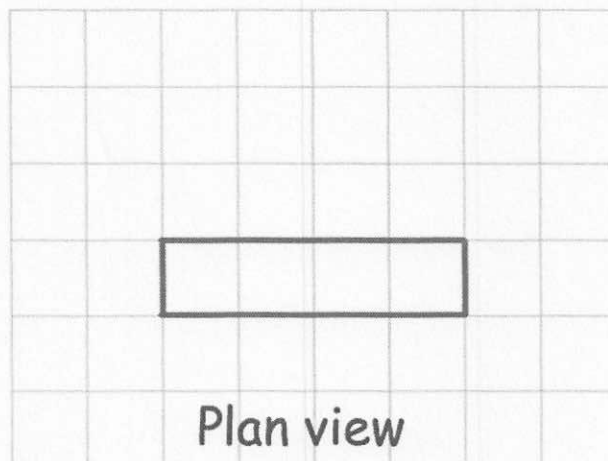
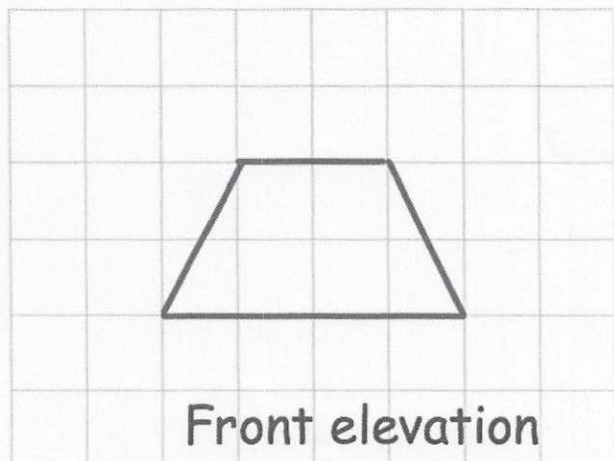
Estimate how long it takes to fill the pool.

$$\text{Volume} = 7 \times 21 \times 2 = 280\text{m}^3$$

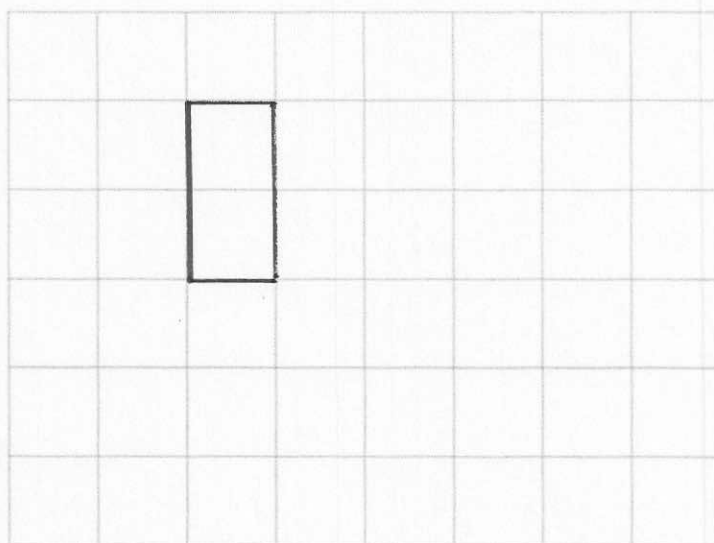
$$\times 1000 = 280,000 \text{ litres}$$

$$\div 4000 = 70 \text{ minutes}$$

23. Here are the front elevation and plan view of a solid shape.

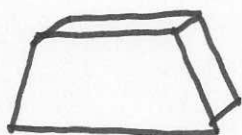


(a) On the grid, draw the side elevation.



(2)

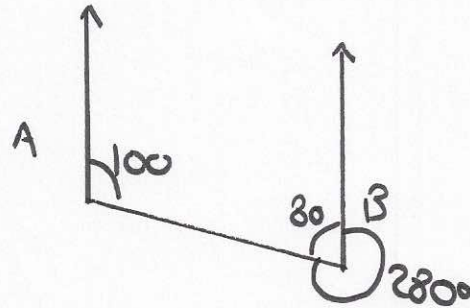
(b) Draw a sketch of the solid shape.



(2)

24. The bearing of A from B is  $280^\circ$

Work out the bearing of B from A.



100  
.....°  
(2)

- 25.

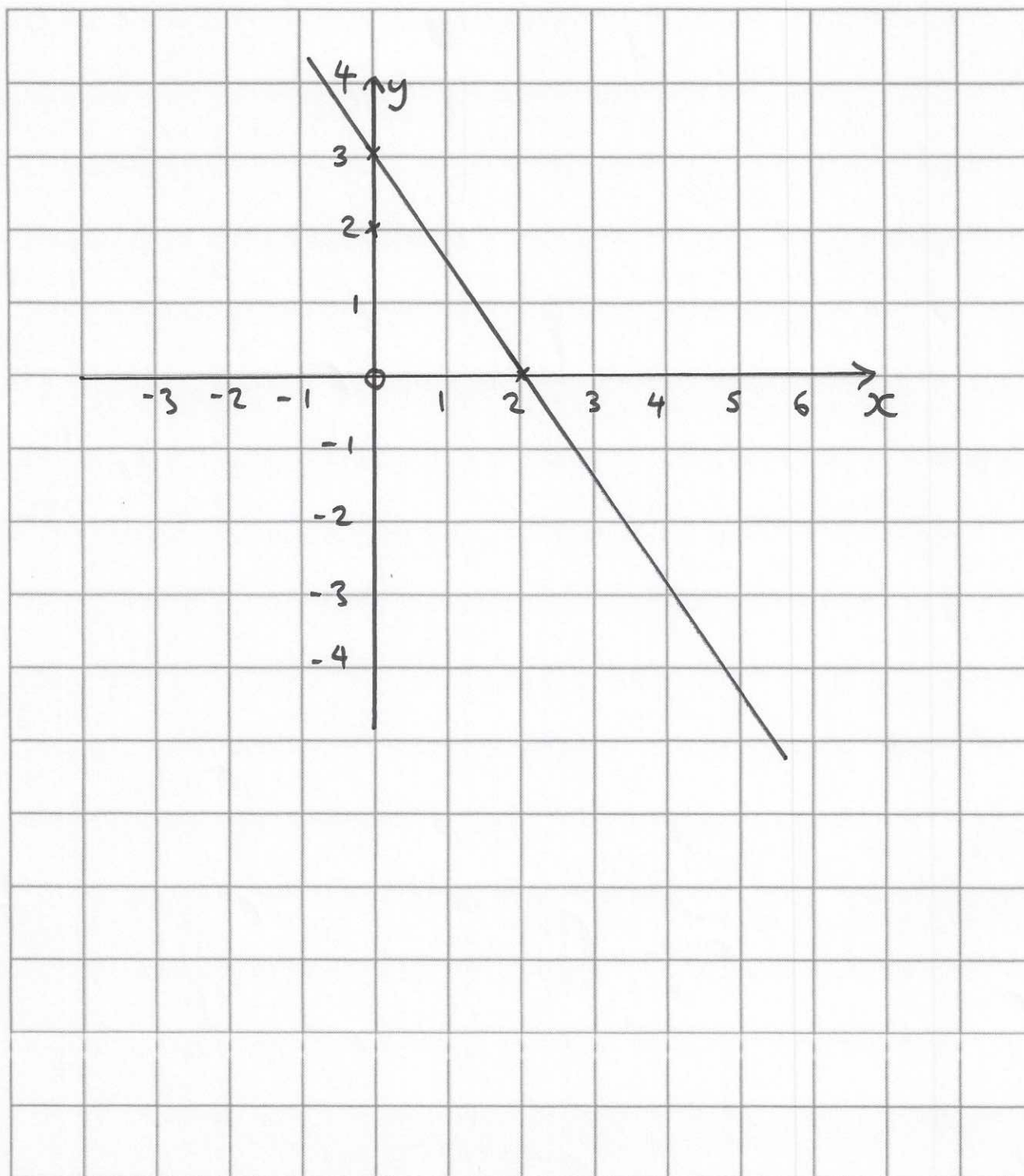
$$a = \begin{pmatrix} 6 \\ -4 \end{pmatrix} \quad b = \begin{pmatrix} -2 \\ 1 \end{pmatrix}$$

Work out  $3b - 4a$  as a column vector

$$3 \begin{pmatrix} -2 \\ 1 \end{pmatrix} - 4 \begin{pmatrix} 6 \\ -4 \end{pmatrix} = \begin{pmatrix} -16 \\ 19 \end{pmatrix}$$

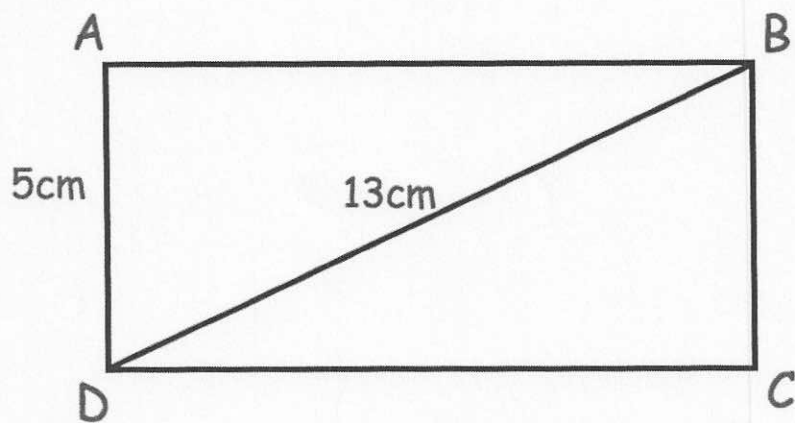
(2)

26. On the grid, draw the graph of  $3x - 2y = 6$



(4)

27. Below is rectangle, ABCD



AD = 5cm  
BD = 13cm

Calculate the perimeter of rectangle ABCD

$$AB^2 = 13^2 - 5^2 = 144$$

$$\therefore AB = 12$$

$$p = 12 + 5 + 12 + 5 =$$

.....34.....cm  
(4)

28. Work out  $4^{-2}$

..... $\frac{1}{16}$ .....  
(2)