

Name: Answers

**GCSE 9-1 Foundation
Practice Paper
Set D
Paper 2 - Calculator**



Corbettmaths

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.
7. A calculator

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. You may use tracing paper.

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

1. (a) Simplify $3w - 4w + 8w$

$$7w$$

(1)

- (b) Simplify $x^2 + x^2$

$$2x^2$$

(1)

- (c) Simplify $7a + 2b + a - 3b$

$$8a - b$$

(2)

-
2. Write 84761 correct to one significant figure.

$$80,000$$

(1)

3. Cardiff Rovers Football Club played 30 games in a season.

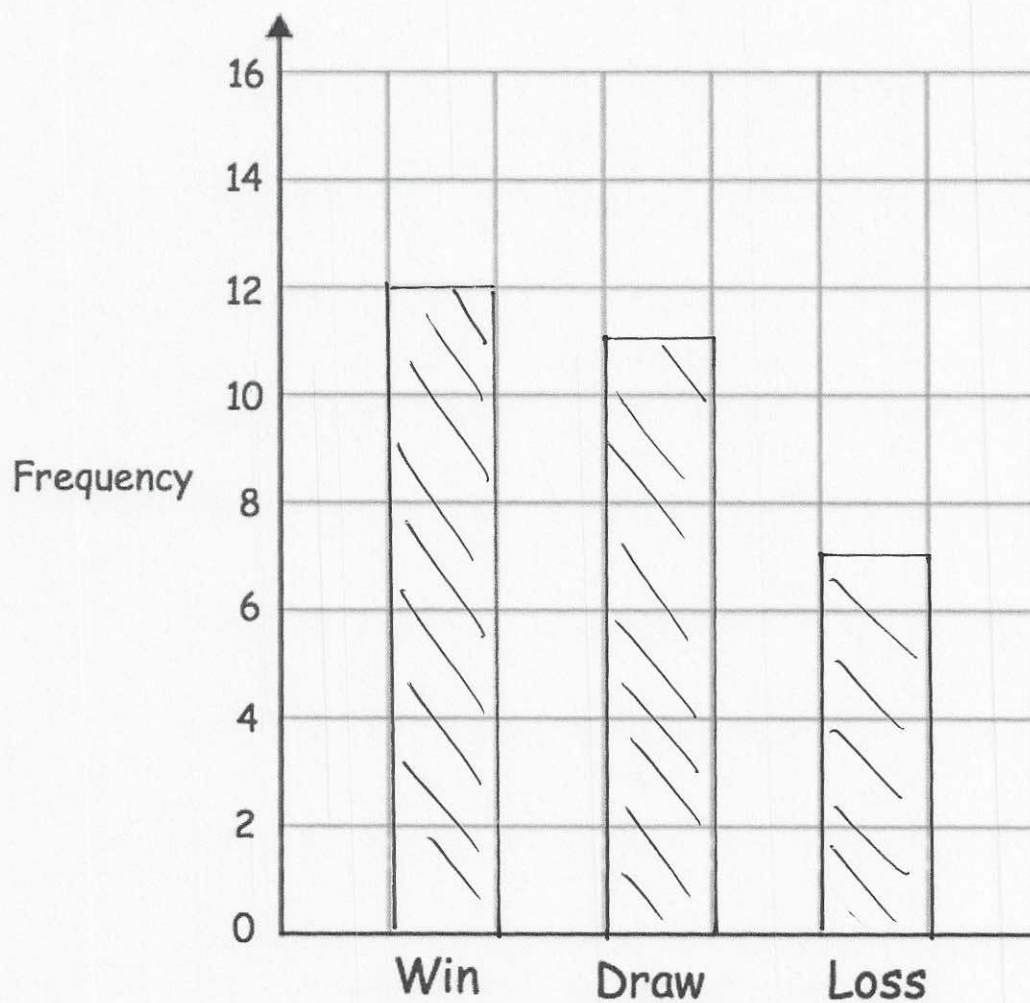
(a) Complete the tally and frequency columns.

Result	Tally	Frequency
Win		12
Draw		11
Loss		7

$$30 - 12 - 7 = 11$$

(3)

(b) Draw a bar chart to show this information.



(2)

4. Arrange these fractions in order, smallest first.

$$\frac{2}{3} \quad \frac{7}{9} \quad \frac{5}{6} \quad \frac{11}{18}$$

$$\frac{12}{18} \quad \frac{14}{18} \quad \frac{15}{18} \quad \frac{11}{18}$$

$$\frac{11}{18} \quad \frac{2}{3} \quad \frac{7}{9} \quad \frac{5}{6}$$

(2)

5. The pictogram shows the amount of money raised by students in some tutor groups at a school.

Key ○ = £10

Tutor group		Raised
S	○○○○○○○	£60
T	○○○	£30
E	○○○○□	£45
P	○○○○□	£35

- (a) Complete the raised column.

(2)

- (b) Complete the pictogram for tutor group E.

(2)

- (c) How much money was raised altogether?

£ 170

(1)

6. For every seven 50p coins, Cain has six 20p coins.
Cain has £18 in 20p coins.

Work out how much money Cain has in total.

$$£18 \div 0.20 = 90 \text{ 20p coins}$$

$$\begin{array}{cc} \text{50p} & \text{20p} \\ \hline 7 & : 6 \\ ? & : 90 \end{array}$$

$$\begin{aligned} 7 \times 90 \div 6 &= 105 \text{ 50p} \\ &= £52.50 \end{aligned}$$

$$52.50 + 18 =$$

$$£ \underline{70.50} \quad (4)$$

7. The probability of **not** winning in a raffle is 0.895

What is the probability of winning in the raffle?

$$1 - 0.895 =$$

$$\underline{0.105} \quad (1)$$

8. Here is a list of 8 numbers.

15 16 17 18 20 22 24 29

(a) Write down a prime number

17 or 29
(1)

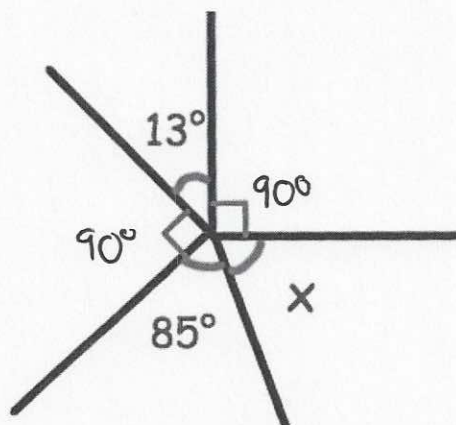
(b) Write down a square number

16
(1)

(c) Write down a number that is a multiple of **both** 9 and 6

18
(1)

9.



Work out the size of the angle marked x.

$$360 - 90 - 13 - 90 - 85 =$$

82
(2)

10. Bethany wants to buy 15 chairs.
She is going to buy the chairs at Chair World, Chair'R'us or Land of Chairs.

<p>Chair World</p> <p>2 chairs for £30 or £18 each</p>		<p>Chair'R'us</p> <p>4 chairs for £58 or £19 each</p>
<p>Land of Chairs</p> <p>3 chairs for £46 or £20 each</p>		

Which shop is best value for money?
You must show your working.

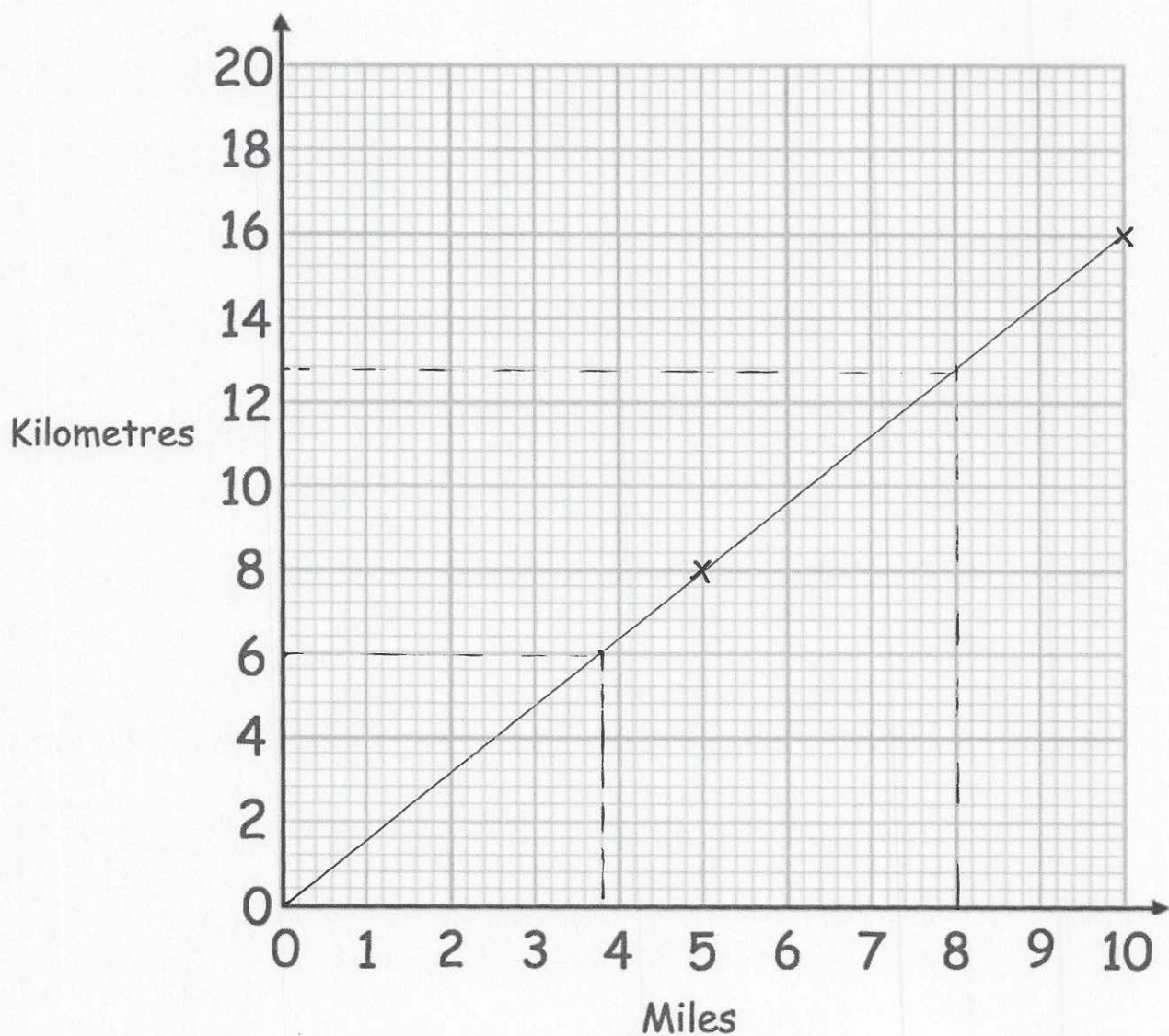
Chair World: $7 \times 30 + 18 = \underline{\pounds 228}$

Chair'R'us: $58 \div 4 + 19 \times 3 = \pounds 231$

Land of Chairs: $5 \times 46 = \pounds 230$

Chair world is best value

11. (a) Use the fact 5 miles = 8 kilometres to draw a conversion graph on the grid.



(2)

Use your graph to convert

(b) 8 miles to kilometres

.....12.8.....km
(1)

(c) 6 kilometres to miles

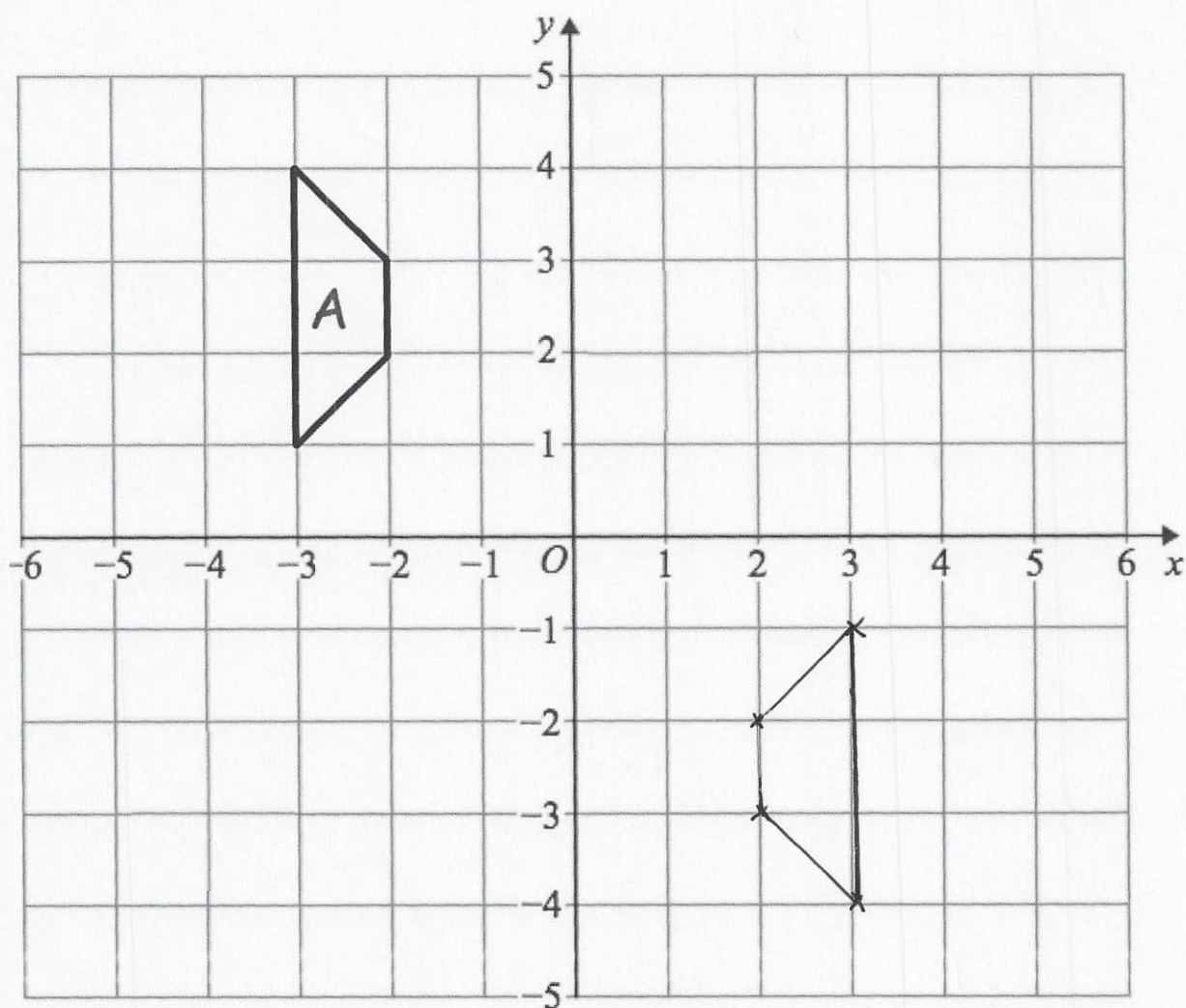
.....3.8.....miles
(1)

12. Find the value of $\sqrt[3]{\frac{81.81 + 29.9}{3.08 - 0.775}}$

Write down all the figures on your calculator display.

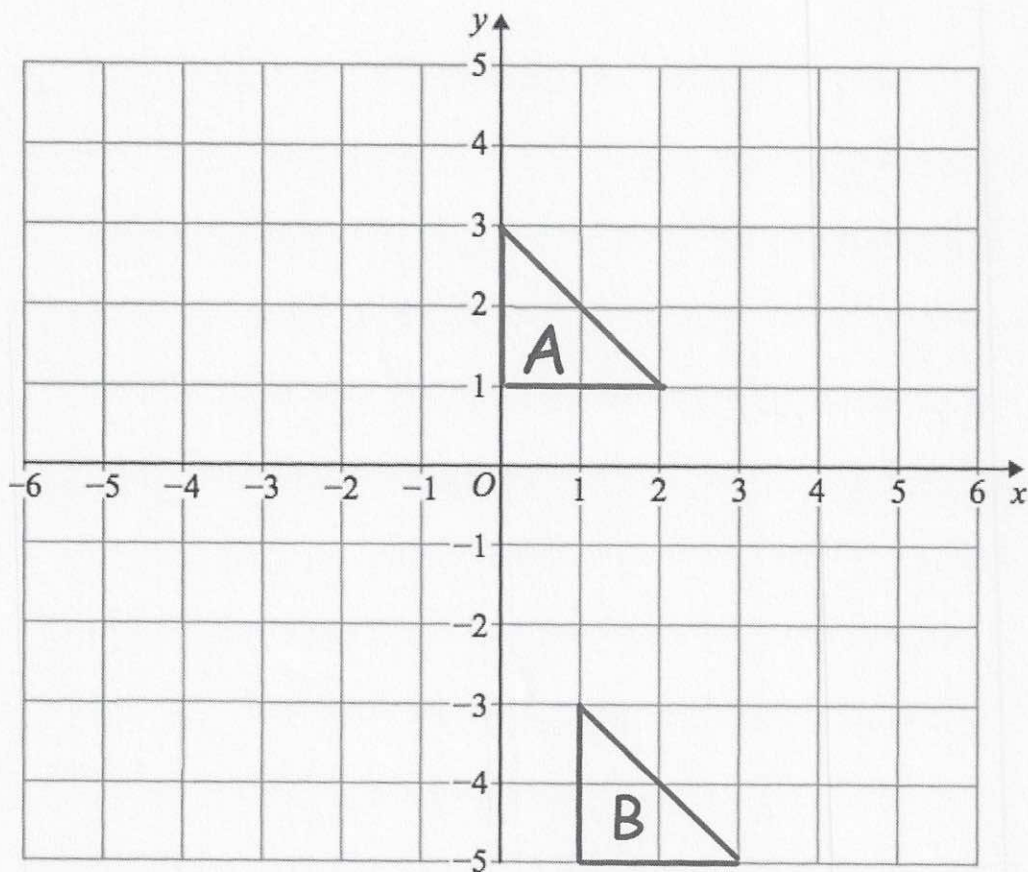
3.645919208
(2)

13.



(a) Rotate trapezium A 180° about the origin.

(2)



- (b) Describe fully the single transformation that maps triangle **A** onto triangle **B**

translation $\begin{pmatrix} 1 \\ -6 \end{pmatrix}$

(2)

14. (a) Expand $2a(3 - a)$

$$6a - 2a^2$$

(1)

- (b) Factorise $x^2 - 4$

$$(x - 2)(x + 2)$$

(1)

15. (a) Write 0.0081 in standard form.

$$8.1 \times 10^{-3}$$

(1)

- (b) Work out the value of $(8 \times 10^5) \div (2.5 \times 10^{-2})$
Give your answer in standard form.

$$= 32,000,000 = 3.2 \times 10^7$$

(2)

16. A box contains red, white, black and brown cubes.
The table shows the probabilities of each colour of cube being selected from the box.

Colour	Red	White	Black	Brown
Probability	0.23	0.58	0.03	0.16

Work out how many more red than brown cubes are in the box.

$$1 - 0.23 - 0.58 - 0.03$$

$$= 0.16$$

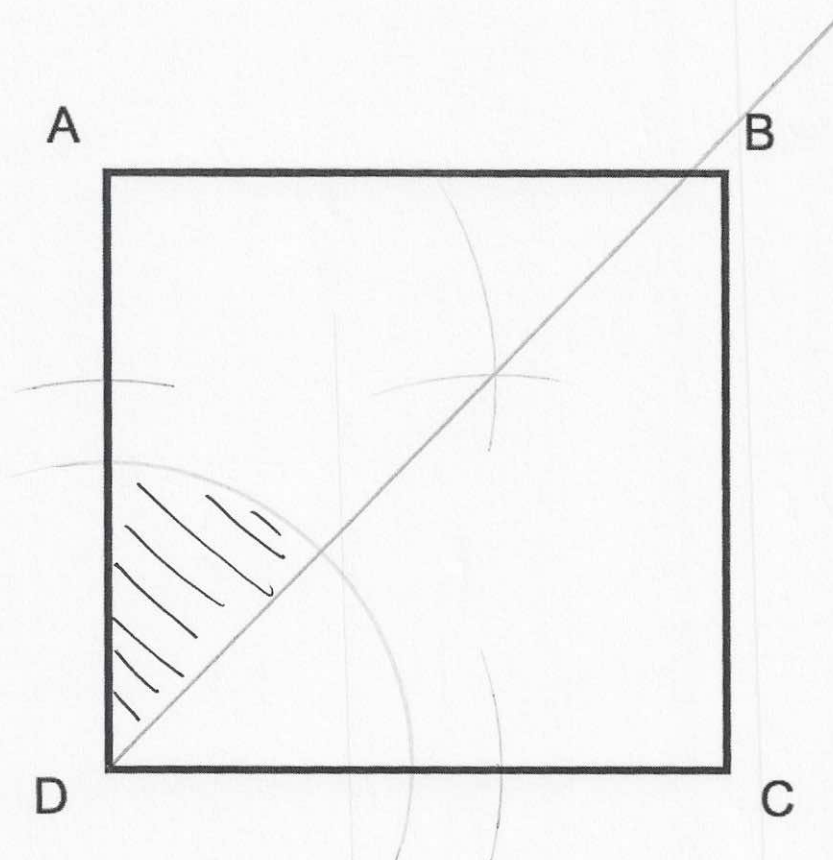
$$\text{Red} \quad 3500 \times 0.23 = 805$$

$$\text{Brown} \quad 3500 \times 0.16 = 560$$

$$245$$

(3)

17. ABCD is a rectangle.



Shade the region inside the rectangle, which is closer to AD than DC, and less than 4cm from D.

(3)

18. A number, n , is rounded to 1 decimal place.
The result is 13.8
Using inequalities, write down the error interval for n .

$$\underline{13.75 \leq n < 13.85}$$

(2)

19. 4 schools sent students to a languages course.

One of the schools sent both students studying French and German.
The ratio of students studying French to German it sent was 2:3
The school sent 24 students studying German.

The other 3 schools sent the same number of students.

Work out the total number of students sent to the languages course.

$$24 \div 3 = 8$$

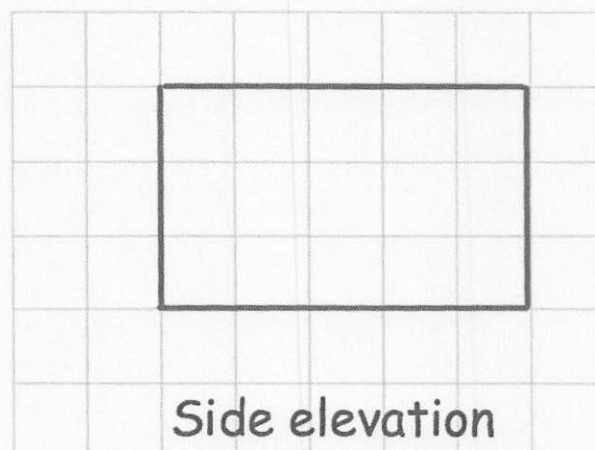
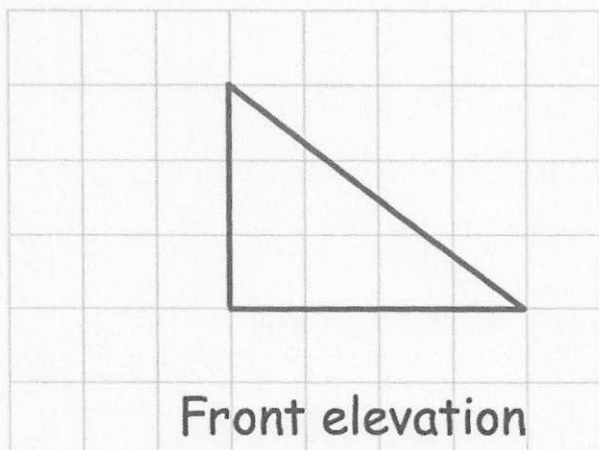
$$8 \times 2 = 16 \text{ study French}$$

$$\text{total for one school} = 16 + 24 = 40$$

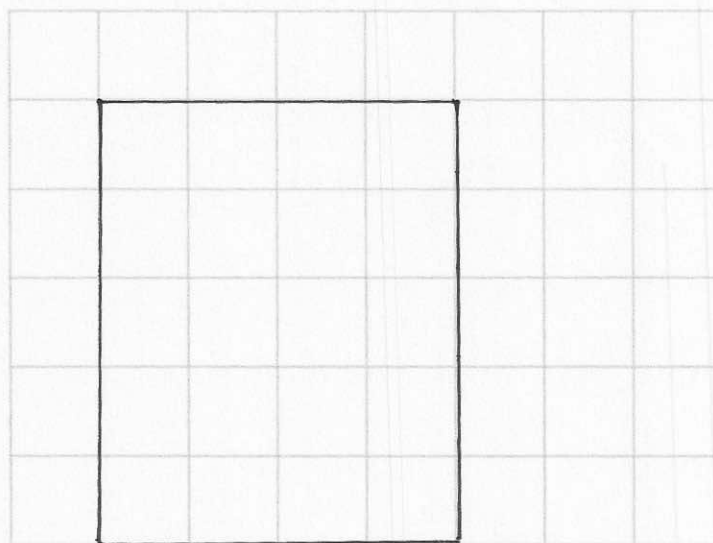
$$40 \times 4 = 160$$

$$\begin{array}{r} 160 \\ \hline (4) \end{array}$$

20. Here are the front and side elevations of a solid shape.

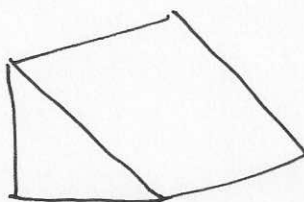


(a) On the grid, draw the plan view.



(2)

(b) Draw a sketch of the solid shape.



(1)

21. David cycles from A to B at a speed of 20mph for $1\frac{1}{4}$ hours.
He then cycle from B to C at a speed 16mph for 2 hours
Finally David cycles from C to D at a speed of 12mph for 45 minutes.

S^D_T

0.75 hours

Work out the average speed for the entire journey.

$$A \text{ to } B: d = 20 \times 1\frac{1}{4} = 25 \text{ miles}$$

$$B \text{ to } C: d = 16 \times 2 = 32 \text{ miles}$$

$$C \text{ to } D: d = 12 \times 0.75 = 9 \text{ miles}$$

$$\text{total } d = 66 \text{ miles}$$

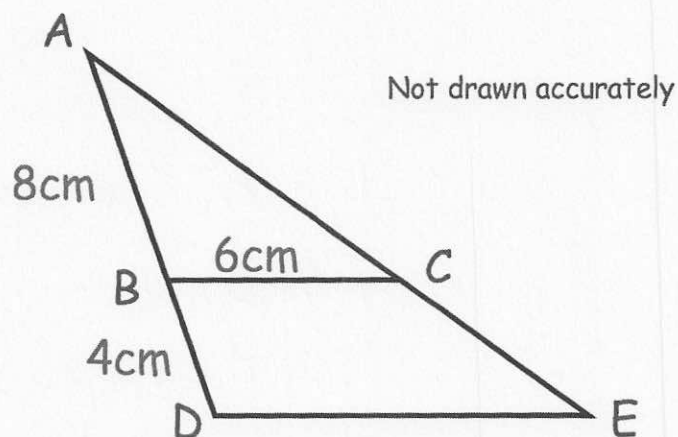
$$\text{total } t = 4 \text{ hours}$$

$$\text{speed} = 66 \div 4 =$$

$$\begin{array}{r} 16.5 \\ \hline \end{array} \text{mph}$$

(4)

22. ABD and ACE are straight lines.
BC is parallel to DE.



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

$$BD = 4\text{cm}$$

$$BC = 6\text{cm}$$

- (a) Work out the length of DE

$$\text{triangle ADE} = 1.5 \times \text{triangle ABC}$$

$$DE = 6 \times 1.5 =$$

$$\begin{array}{r} 9 \\ \hline \text{.....cm} \\ (2) \end{array}$$

$$AE = 13.2\text{cm}$$

- (b) Work out the length of AC

$$AC:CE = 2:1$$

$$13.2 \div 3 \times 2 =$$

$$\begin{array}{r} 8.8 \\ \hline \text{.....cm} \\ (2) \end{array}$$

23. The value of a car decreases by 7.2% each year. $100 - 7.2 = 92.8$
When bought the car cost £6200.

(a) Work out how much the car will be worth after one year.

$$6200 \times 0.928 =$$

$$\text{£} \underline{5753.60} \quad (2)$$

(b) How many years will it take the car to have a value less than £4000?

$$\begin{aligned} 6200 \times 0.928^4 &= 4598.15 \\ 6200 \times 0.928^5 &= 4267.09 \\ 6200 \times 0.928^6 &= 3959.86 \end{aligned}$$

$$\underline{6} \text{ years} \quad (2)$$

24. Solve $x^2 - 10x + 16 = 0$

$$(x - 2)(x - 8) = 0$$

$$x = 2 \quad x = 8$$

(3)

25. The first 5 terms in a number sequence are

$$\begin{array}{ccccccccc} -7 & -11 & -15 & -19 & \dots & \dots \\ \underbrace{\hspace{1.5cm}} & \underbrace{\hspace{1.5cm}} & & & & \\ -4 & -4 & & & & \end{array}$$

(a) Work out the n th term of the sequence.

$$\frac{-4n - 3}{\dots\dots\dots} \quad (2)$$

The n th term of a different sequence is $2n^2 - 1$

(b) Work out the difference between the 10th and 20th terms of the sequence.

$$\begin{array}{l} n = 10 \\ 2 \times 10^2 - 1 = 199 \end{array}$$

$$\begin{array}{l} n = 20 \\ 2 \times 20^2 - 1 = 399 \end{array}$$

$$399 - 199 = \frac{200}{\dots\dots\dots} \quad (2)$$