



1 Work out  $\frac{\sqrt{115} + 21}{2.4^2}$

a Write down your full calculator display.

.....

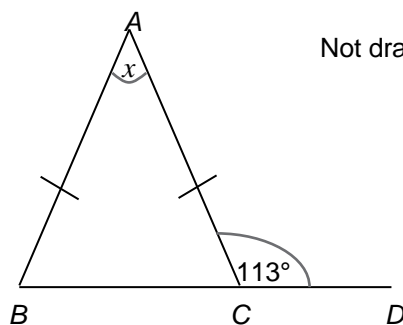
b Give your answer correct to 2 decimal places.

.....

(2 marks)



2 Triangle  $ABC$  is isosceles, with  $AB = AC$ .  
Angle  $ACD = 113^\circ$



Not drawn accurately.

Work out the size of angle  $BAC$ .

.....

(3 marks)



3 A class was given a mental arithmetic test.  
The frequency table shows their scores.

Mark	4	5	6	7	8	9	10	Total
Frequency	1	3	5	2	7	8	4	30

Work out the mean mark.

.....

(3 marks)

- 4 Jade, Kelly, Lucy, Mel and Nicky play a game.  
Here is some information about the number of points they score.

Jade scores 14 points.

Kelly scores 8 more points than Jade.

Lucy scores twice as many points as Mel.

Mel scores 7 fewer points than Kelly.

The total number of points scored is 100.

How many points did Nicky score?

.....  
(4 marks)

- 5 Write  $3\frac{1}{2}$  hours : 36 minutes as a ratio in its simplest form.

.....  
(2 marks)

- 6 There are 6 cakes in a box.  
The box and cakes weigh 250 grams altogether.  
The box weighs 22 grams.  
Each cake weighs the same.

What does each cake weigh?

.....grams  
(3 marks)

- 7 Solve

a  $3x - 5 = 13$

.....

b  $2(x + 3) = 21$

.....  
(5 marks)

8 I am thinking of a number.

$\frac{3}{4}$  of my number is 12.

Work out five times my number.

You must show your working.

.....

(3 marks)



9 Two shops are selling baked beans.

**Cheapomarket**  
Baked Beans  
Normal price 64p  
Special offer, 25% off

**Savershop**  
Baked Beans  
Normal price 69p  
Special offer,  
3 tins for the price of 2

Which shop has the cheaper offer?

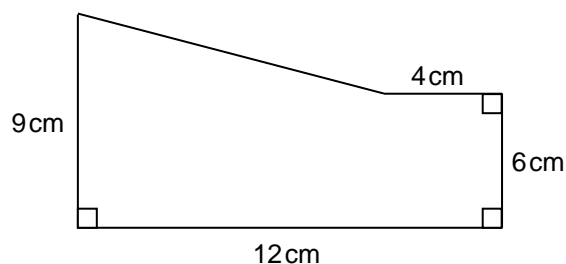
You must show your working.

.....

(4 marks)

10 Work out the area of this shape.

Not drawn accurately



.....cm<sup>2</sup>

(4 marks)



11 Divide £506 in the ratio 2 : 4 : 5

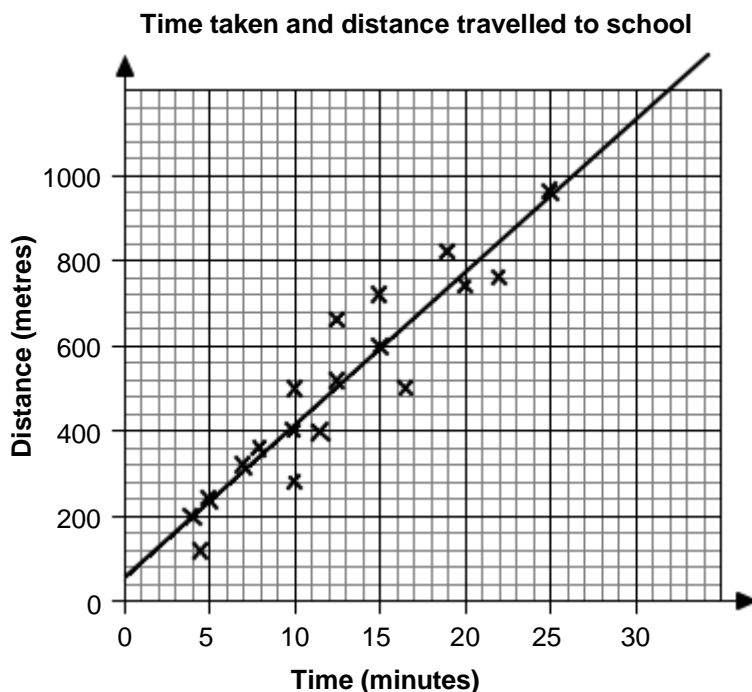
.....  
(3 marks)



12 A video game costs £44. A new version of the game is released and the price has increased by 12%. Work out the cost of the new version.

£.....  
(3 marks)

13 The scatter graph shows the relationship between the time taken for students to travel to school and the distance they have to travel.



Use the line of best fit to estimate

a how long it takes a student who lives 700 metres from the school

.....min

b how far away a student lives if she takes 24 minutes to travel to school.

.....m

(2 marks)

**14 a** Round 11 580 to 3 significant figures.

.....

**b** By rounding to 1 significant figure, estimate the value of  $\frac{395.4 \times 0.523}{7.96}$

.....

**(4 marks)**

**15** This two-way table shows some information about the people at a gym one morning

	16-29 years	30-49 years	50+ years	Total
Full members	10		38	70
Off-peak members		10	16	
Holiday members	6	4	0	10
Total		36		120

**a** Complete the two-way table.

**b** What is the probability that a member, chosen at random, is an off-peak member and less than 50 years old?

Give your answer as a fraction in its simplest form.

.....

**(4 marks)**

**16** Matilda is playing a game with a biased dice.

The probability that she throws a six is 0.4

**a** What is the probability she does not throw a six?

.....

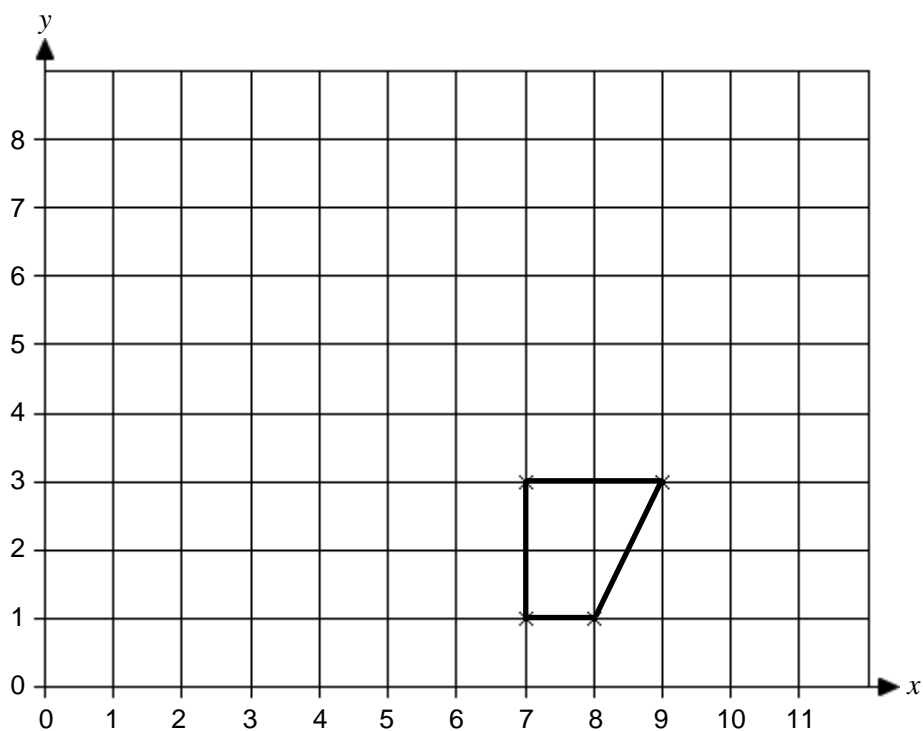
**b** Matilda throws the dice 70 times.

Work out an estimate for the number of sixes she should expect to throw.

.....

**(3 marks)**

17 A trapezium is drawn on this grid.



Using (10, 1) as the centre of enlargement, draw an enlargement of the trapezium of scale factor 3.

(2 marks)



18 A map has a scale factor of 1 : 25 000

What real distance is represented by a distance of 6.8 cm on the map?

.....km

(2 marks)

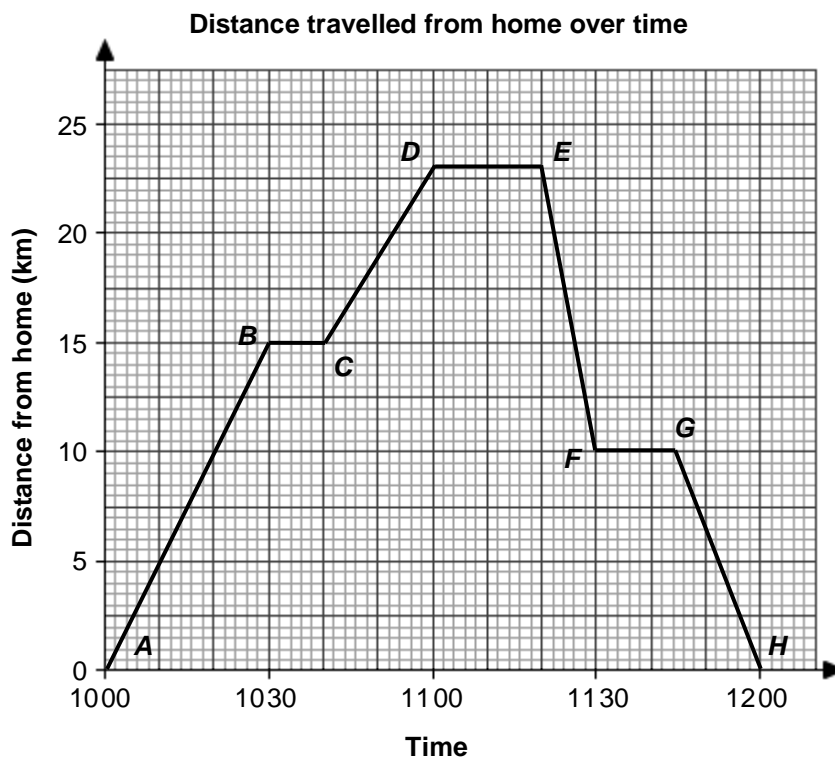
19 Work out  $\frac{8(7^2 - 3^3)}{\sqrt{121}}$

You must show your working.

.....

(3 marks)

- 20 Hannah leaves home in her car at 10 00 and returns at 12 00.  
The graph shows her journey.



- a How far does she travel in her car altogether?

.....km

- b For how long does the car stop altogether?

.....min



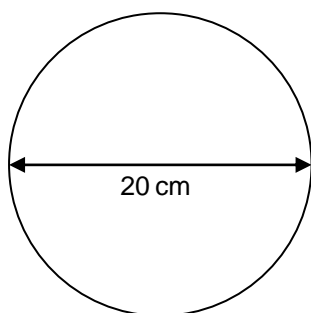
- c On which part of her journey is she travelling at the fastest speed?  
Work out the fastest speed in km/h.

.....km/h

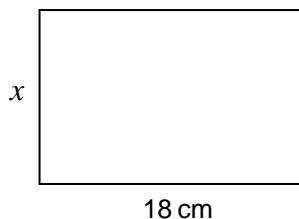
**(5 marks)**



- 21** The circumference of the circle and the perimeter of the rectangle are equal.  
The circle has a diameter of 20 cm.  
The rectangle has a length of 18 cm.



Not drawn accurately



Work out the width of the rectangle, marked  $x$  on the diagram.  
You must show your working.

.....cm

**(4 marks)**



- 22** Here is a formula  $v^2 = u^2 + 2as$   
Work out the value of  $s$  when  $u = 8$ ,  $v = 13$  and  $a = 9$

.....

**(3 marks)**

- 23 a** Factorise  $18y + 12$

.....

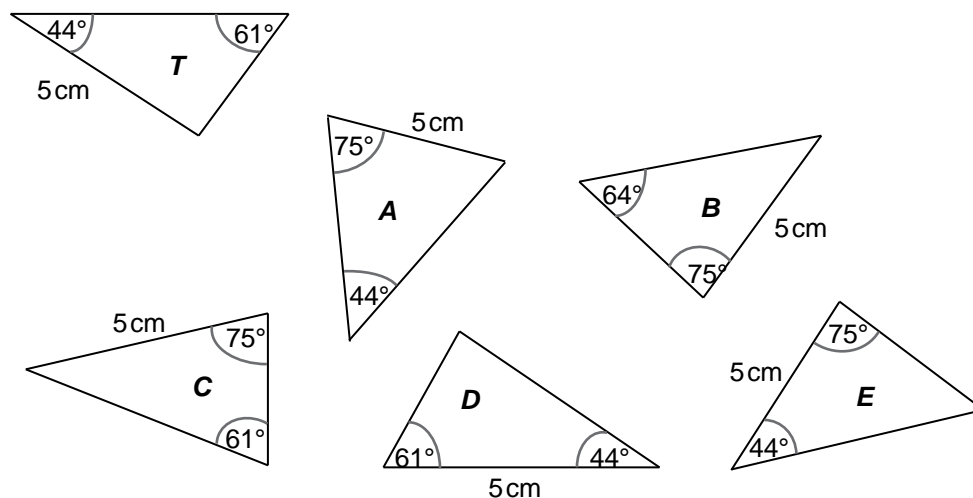
- b** Expand and simplify  $5(m + 2f) + 3(m - 4f)$

.....

**(3 marks)**



24 Triangle  $T$  and triangles  $A$ ,  $B$ ,  $C$ ,  $D$  and  $E$  are not drawn accurately.



Which two of triangles  $A$ ,  $B$ ,  $C$ ,  $D$  and  $E$  are congruent to triangle  $T$ ?

.....  
(2 marks)

25 It takes 10 people 6 days to do a house 'make-over'.

a How long will it take 20 people?

.....days

b How long will it take 4 people?

.....days  
(4 marks)