

Diagram **NOT**  
accurately drawn

The diagram shows a parallelogram  $ABCD$  and an isosceles triangle  $DEF$  in which  $DE = DF$

$CDF$  and  $ADE$  are straight lines.

Angle  $BCD = 58^\circ$

Work out the size of angle  $DEF$ .

Give a reason for each stage of your working.

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(Total for Question 18 is 5 marks)



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19 Andreas, Isla and Paulo share some money in the ratios 3 : 2 : 5

The **total** amount of money that Isla and Paulo receive is £76 more than the amount of money that Andreas receives.

Andreas buys a video game for £48.50 with some of his share of the money.

Work out how much money Andreas has left from his share of the money when he has bought the video game.

£.....

(Total for Question 19 is 4 marks)



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20 Himari's annual salary is 3 130 000 Japanese Yen (JPY).  
She gets a salary increase of 4%

(a) Work out Himari's salary after this increase.

.....JPY  
(3)

Kaito bought a car.

The value of the car when Kaito bought it was 750 000 JPY.

At the end of each year, the value of his car had depreciated by 15%

(b) Work out the value of Kaito's car at the end of 3 years.  
Give your answer correct to the nearest JPY.

.....JPY  
(3)

(Total for Question 20 is 6 marks)



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21 (a) Simplify  $g^6 \times g^4$

.....  
(1)

(b) Simplify  $(3cd^4)^2$

.....  
(2)

(c) Solve the simultaneous equations

$$\begin{aligned} 4x + 3y &= 17 \\ x + 2y &= 5 \end{aligned}$$

Show clear algebraic working.

$x =$  .....  
 $y =$  .....  
(3)

(Total for Question 21 is 6 marks)



22 The diagram shows a right-angled triangle.

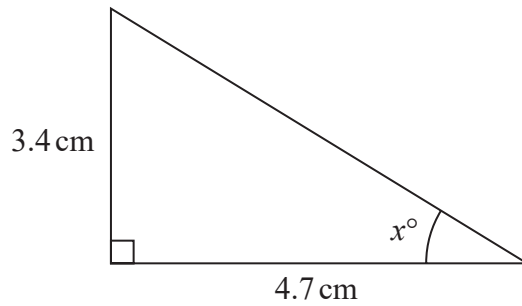


Diagram **NOT** accurately drawn

Calculate the value of  $x$ .  
Give your answer correct to one decimal place.

$x = \dots\dots\dots$

(Total for Question 22 is 3 marks)

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23 The diagram shows an isosceles triangle.

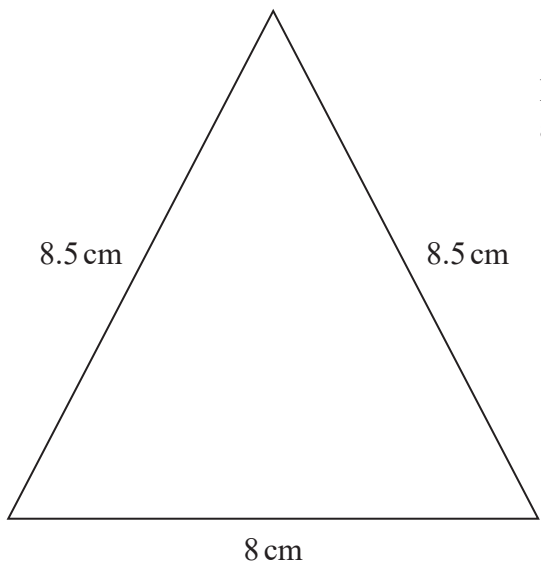


Diagram **NOT** accurately drawn

Work out the area of the triangle.

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

(Total for Question 23 is 4 marks)



24 The diagram shows a solid cylinder with radius 3 m.

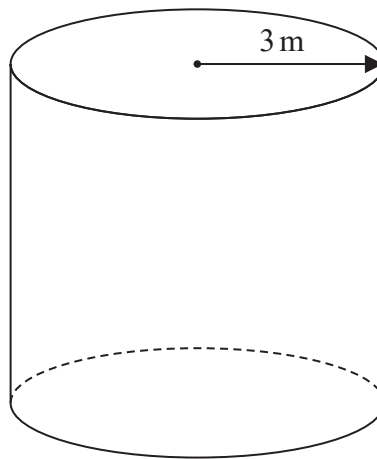


Diagram **NOT** accurately drawn

The volume of the cylinder is  $72\pi \text{ m}^3$

Calculate the **total** surface area of the cylinder.  
Give your answer correct to 3 significant figures.

.....m<sup>2</sup>

(Total for Question 24 is 5 marks)

**TOTAL FOR PAPER IS 100 MARKS**

