

17 Here is a list of six numbers written in order of size.

$x$     5     $y$      $z$     10    12

The numbers have

a range of 9

a median of 8

a mode of 10

Find the value of  $x$ , the value of  $y$  and the value of  $z$

$x =$  .....

$y =$  .....

$z =$  .....

(Total for Question 17 is 3 marks)

18 (a) Simplify  $w^{12} \div w^3$

.....  
(1)

(b) Simplify  $5m^4p^2 \times 2m^3p$

.....  
(2)

(Total for Question 18 is 3 marks)



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19 Divya and Yuan each pay for a holiday at a special offer price.

**Divya's holiday**  
Normal price: \$1600  
Special offer:  
16% off the normal price

**Yuan's holiday**  
Normal price: \$1400  
Special offer:  
 $k\%$  off the normal price

The amount that Divya pays is the same as the amount that Yuan pays.

Work out the value of  $k$

$k = \dots\dots\dots$

(Total for Question 19 is 4 marks)



P 7 2 4 3 6 A 0 1 9 2 4

- 20  $C$  grams of chocolate is shared in the ratios 2:5:8  
The difference between the largest share and the smallest share is 390 grams.

Work out the value of  $C$

$$C = \dots\dots\dots$$

(Total for Question 20 is 3 marks)

- 21 Solve the simultaneous equations

$$\begin{aligned}x + 2y &= 15 \\4x - 6y &= 4\end{aligned}$$

Show clear algebraic working.

$$x = \dots\dots\dots$$

$$y = \dots\dots\dots$$

(Total for Question 21 is 3 marks)



22 (a) Write  $9.32 \times 10^{-5}$  as an ordinary number.

.....  
(1)

(b) Work out  $3 \times 10^5 - 6 \times 10^4$

Give your answer in standard form.

.....  
(2)

(c) Work out  $(3 \times 10^{55}) \times (6 \times 10^{65})$

Give your answer in standard form.

.....  
(2)

(Total for Question 22 is 5 marks)



23 (a) Factorise fully  $18c^3d^2 - 21c^2$

.....  
(2)

(b) (i) Factorise  $y^2 - 3y - 18$

.....  
(2)

(ii) Hence, solve  $y^2 - 3y - 18 = 0$

.....  
(1)

(Total for Question 23 is 5 marks)

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24 The diagram shows an isosceles triangle  $ABC$

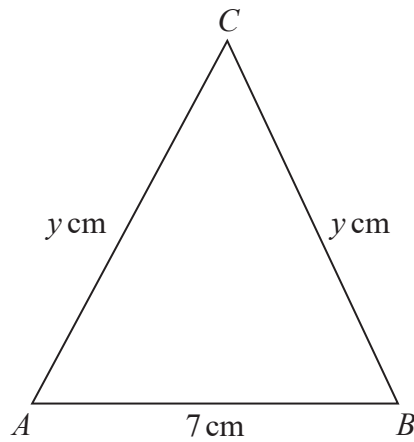


Diagram NOT accurately drawn

$$AB = 7 \text{ cm} \quad AC = BC = y \text{ cm}$$

The area of the triangle is  $42 \text{ cm}^2$

Work out the value of  $y$

$$y = \dots\dots\dots$$

(Total for Question 24 is 4 marks)



P 7 2 4 3 6 A 0 2 3 2 4

25  $R$  and  $T$  are points on a circle, centre  $O$

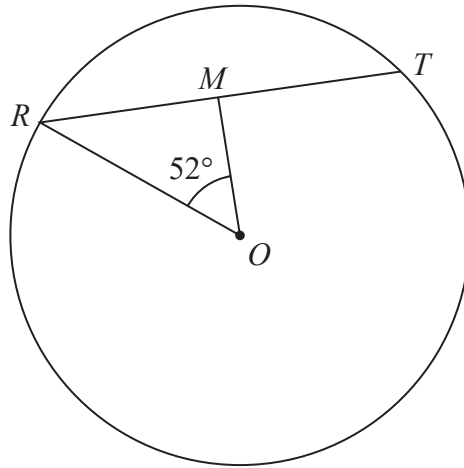


Diagram **NOT** accurately drawn

$RT = 12$  cm  
 $M$  is the midpoint of  $RT$   
Angle  $ROM = 52^\circ$

Work out the area of the circle.  
Give your answer correct to 3 significant figures.

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

(Total for Question 25 is 4 marks)

TOTAL FOR PAPER IS 100 MARKS

