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17 Gladys buys a table for \$465 to sell in her shop.

She sells the table for \$520

- (a) Work out the percentage profit that Gladys makes from the sale of the table.  
Give your answer correct to 3 significant figures.

.....%  
(3)

Gladys has a sale in her shop.

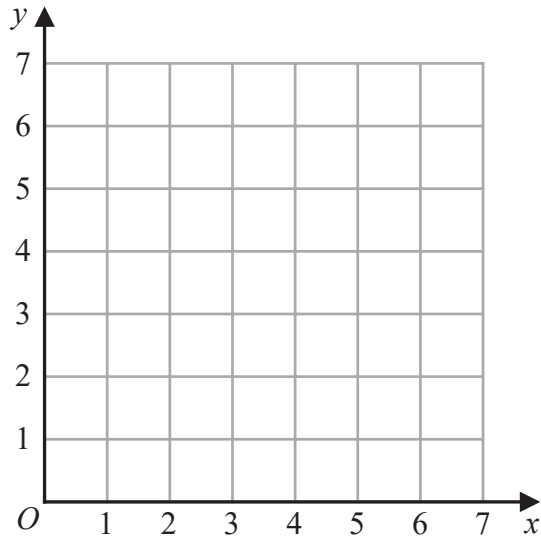
She decreases all the normal prices by 12%  
The normal price of an armchair was \$550

- (b) Work out the sale price of the armchair.

\$.....  
(3)

(Total for Question 17 is 6 marks)





(a) On the grid, draw and **label** the straight line with equation

(i)  $x = 1.5$

(ii)  $y = x$

(iii)  $x + y = 6$

(3)

(b) Show, by shading on the grid, the region that satisfies **all three** of the inequalities

$$x \geq 1.5$$

$$y \geq x$$

$$x + y \leq 6$$

Label the region **R**.

(1)

(Total for Question 18 is 4 marks)



19 (a) Expand and simplify  $4x(2x + 5) - 3x(2x - 3)$

.....  
(2)

Given that  $\frac{y^5 \times y^n}{y^6} = y^{13}$

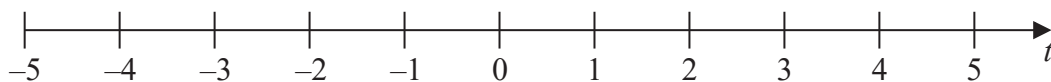
(b) work out the value of  $n$ .

$n =$  .....  
(2)

(c) (i) Solve the inequality  $7t - 8 < 2t + 7$

.....  
(2)

(ii) On the number line below, represent the solution set of the inequality solved in part (c)(i)



(1)

(Total for Question 19 is 7 marks)



20 (a) Write down the value of  $y^0$

.....  
(1)

(b) Work out  $\frac{9.6 \times 10^{141} + 6.4 \times 10^{140}}{3.2 \times 10^{16}}$

Give your answer in standard form.

.....  
(3)

**(Total for Question 20 is 4 marks)**

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21 There are 5 cocoa pods in a bag.  
The mean weight of the 5 cocoa pods is 398 grams.

A sixth cocoa pod is put into the bag.  
The mean weight of the 6 cocoa pods is 401 grams.

Work out the weight of the sixth cocoa pod that is put into the bag.

..... grams

**(Total for Question 21 is 3 marks)**



22  $A$ ,  $B$  and  $C$  are points on a circle with centre  $O$ .

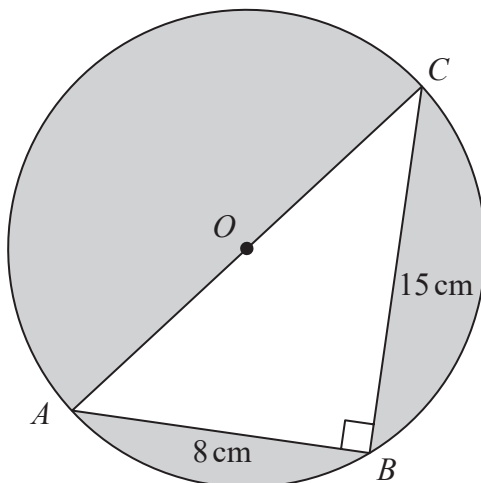


Diagram **NOT** accurately drawn

$AOC$  is a diameter of the circle.

$AB = 8\text{ cm}$     $BC = 15\text{ cm}$

Angle  $ABC = 90^\circ$

Work out the total area of the regions shown shaded in the diagram.  
Give your answer correct to 3 significant figures.

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..... cm<sup>2</sup>**(Total for Question 22 is 5 marks)****23**

$$A = 2^3 \times 3^2 \times 5^2 \times 11$$

$$B = 2^4 \times 3 \times 5^4 \times 13$$

Find the lowest common multiple (LCM) of  $A$  and  $B$ .  
Give your answer as a product of powers of prime numbers.

**(Total for Question 23 is 2 marks)**

24 The people working for a company work in Team A or in Team B.

number of people in Team A : number of people in Team B = 3 : 4

$\frac{4}{5}$  of Team A work full time.

24% of Team B work full time.

Work out what fraction of the people working for the company work full time.  
Give your fraction in its simplest form.

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(Total for Question 24 is 3 marks)

TOTAL FOR PAPER IS 100 MARKS

