

The table gives information about the boiling points and the freezing points of some elements.

Element	Chlorine	Mercury	Neon	Oxygen
Boiling point (°C)	-35	357	-246	-183
Freezing point (°C)	-101	-39	-249	-218

(b) Which of these elements has the lowest boiling point?

.....  
(1)

(c) Which of these elements has the largest difference in temperature between its boiling point and its freezing point?

.....  
(1)

Dr Strauss is going to cool chlorine from its boiling point to its freezing point. He knows that it will take 2 minutes for the temperature of the chlorine to go down 10°C.

(d) Work out how long it will take the chlorine to cool from its boiling point to its freezing point?

..... minutes  
(2)

(Total for Question 11 is 6 marks)



**12** In 2018, Salman saved 120 riyals each month.

At the start of 2019, Salman increased 120 riyals by 7.5%  
He then saved this new amount each month during 2019

Work out how much money Salman saved in total in 2019

..... riyals

**(Total for Question 12 is 3 marks)**

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13 (a) Expand  $x(5 - x)$

.....  
(1)

(b) Factorise  $3y - 21$

.....  
(1)

(c) Make  $p$  the subject of the formula  $f = 3p - d$

.....  
(2)

Sergio buys  $m$  boxes of seeds and  $n$  packets of seeds.

Each box contains 10 seeds.

Each packet contains 6 seeds.

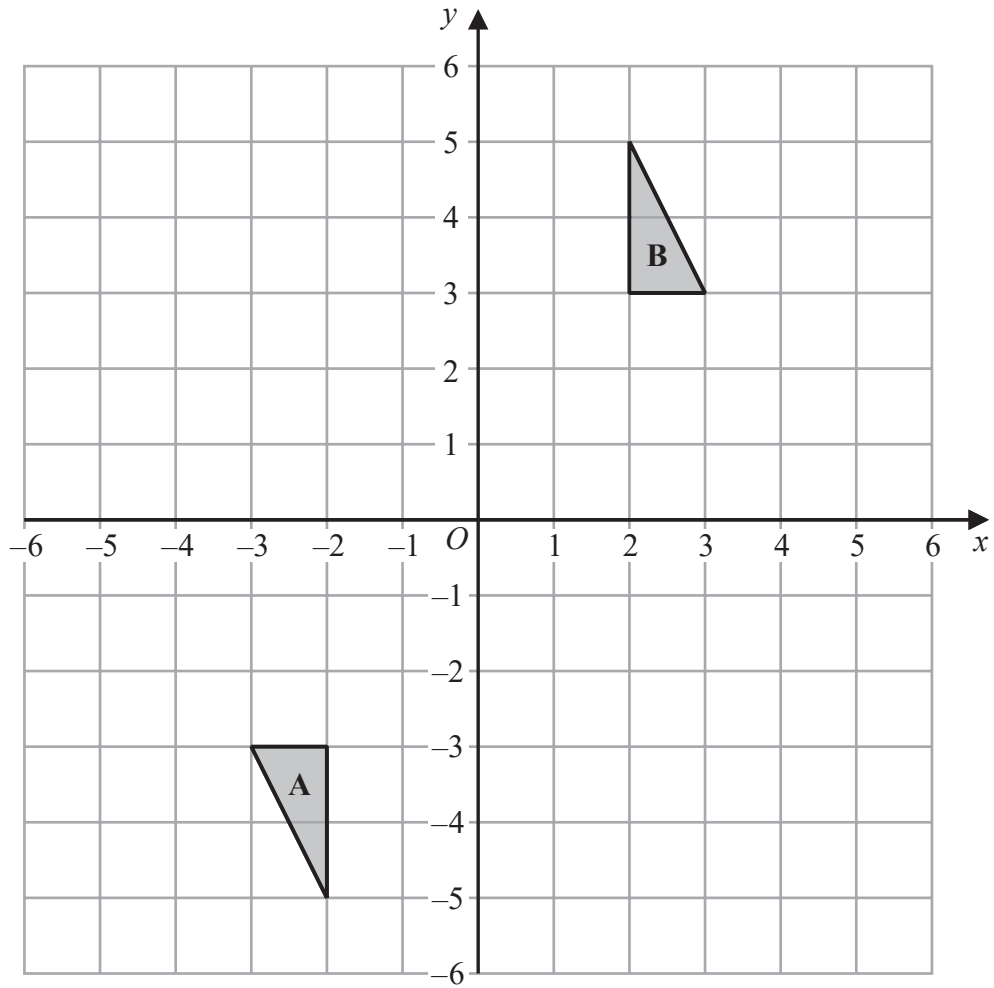
The total number of seeds that Sergio buys is  $T$ .

(d) Write down a formula for  $T$  in terms of  $m$  and  $n$ .

.....  
(3)

(Total for Question 13 is 7 marks)





Describe fully the single transformation that maps triangle A onto triangle B.

.....

.....

.....

(Total for Question 14 is 2 marks)

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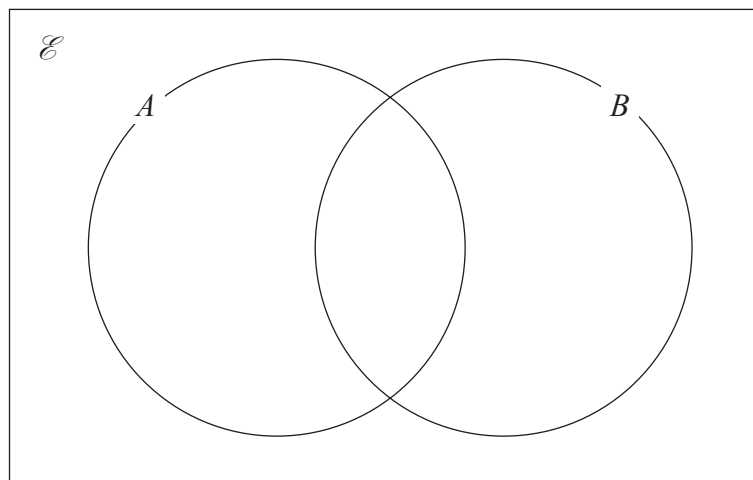
- 15 A regular polygon has  $n$  sides.  
The size of each interior angle of the regular polygon is  $140^\circ$   
Work out the value of  $n$ .

$$n = \dots\dots\dots$$

(Total for Question 15 is 3 marks)

- 16  $\mathcal{E} = \{10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20\}$   
 $A = \{\text{multiples of } 5\}$   
 $B = \{\text{even numbers}\}$

Complete the Venn diagram for this information.



(Total for Question 16 is 3 marks)



17 (a) Simplify  $\frac{x^9}{x^2}$

.....  
(1)

(b) Write  $\frac{7^8 \times 7^4}{7^3}$  as a single power of 7

.....  
(2)

**(Total for Question 17 is 3 marks)**

18 Change  $32.4 \text{ m}^3$  into  $\text{cm}^3$

.....  $\text{cm}^3$

**(Total for Question 18 is 2 marks)**



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19 Show that  $4\frac{2}{3} + 3\frac{4}{5} = 8\frac{7}{15}$

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(Total for Question 19 is 3 marks)

