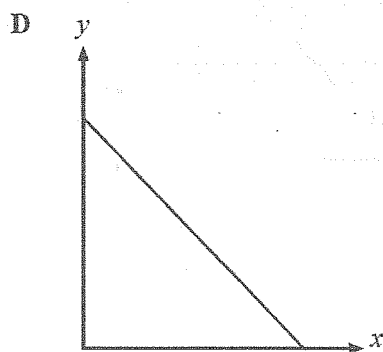
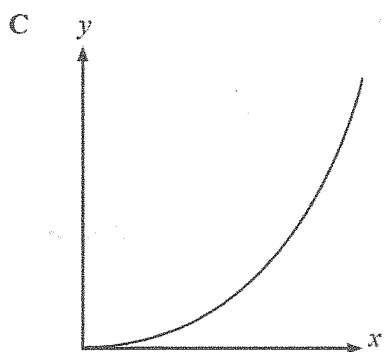
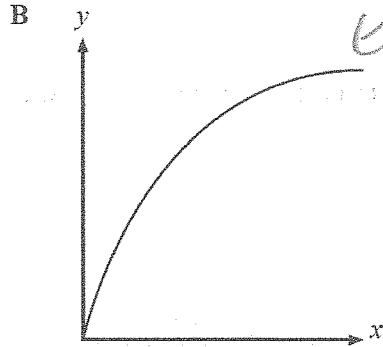
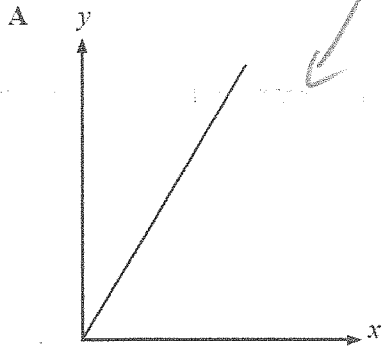


m8 = 7 days to go!

7 y is directly proportional to x^2

Which graph shows this?



Answer C [1]

Evaluate

$1000^{1/3}$

$\sqrt[3]{1000}$

10

(1)

- 9 Over a period of 8 hours, the temperature of a room is given by

$$T = h^2 - 6h + 15$$

where T is the temperature in degrees Celsius, h hours after the experiment started.

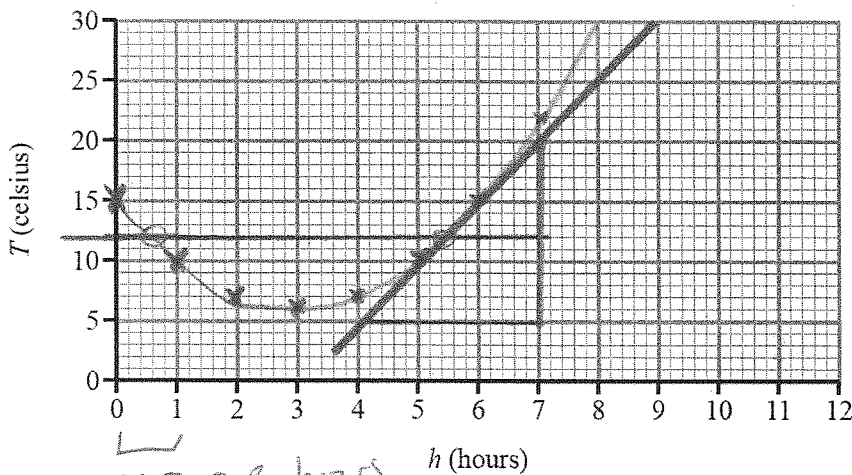
- (a) Complete the table below.

| | | | | | | | | |
|-----|----|----|---|---|---|----|----|----|
| h | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| T | 15 | 10 | 7 | 6 | 7 | 10 | 15 | 22 |

[1]

→ Symmetry on quadratic
→ (3, 6) is turning point!

- (b) Plot the points and draw the graph on the grid below.



[2]

- (c) Use your graph to find the times when the temperature in the room was 12 degrees Celsius.

0.6 of hour $\rightarrow \frac{2}{5}$ of 60 = 36 min

5.4 of hour $\rightarrow \frac{2}{5}$ of 60 = 24 min

Answer 36 min, 24 min [1]

- (d) Use your graph to calculate the gradient of the curve when $h = 6$

$\frac{\text{rise}}{\text{run}} = \frac{5 \rightarrow 20}{4.2 \rightarrow 7} = \frac{15}{2.8}$ Answer 5.357 [2]

$\frac{15}{2.8}$

- (e) What is the meaning of the value you found in (d)?

Answer The temperature change per hour [1]