



6. Granny and her granddaughter Gill both had their birthday yesterday. Today, Granny's age in years is an even number and 15 times that of Gill. In 4 years' time Granny's age in years will be the square of Gill's age in years. How many years older than Gill is Granny today?
- A 42                      B 49                      C 56                      D 60                      E 64

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6. C Let Granny's age today be  $G$  and Gill's age today be  $g$ .  
Therefore  $G = 15g \dots (1)$  and  $G + 4 = (g + 4)^2 \dots (2)$ .  
Substituting (1) into (2) gives  $15g + 4 = g^2 + 8g + 16$ , hence  $g^2 - 7g + 12 = 0$ .  
Thus  $(g - 3)(g - 4) = 0$ , hence  $g = 3$  or  $4$ .  
As  $G$  is even and  $G = 15g$ ,  $g$  is also even. Thus  $g = 4$  and  $G = 15 \times 4 = 60$ .  
Hence today, Granny is 56 years older than Gill.