

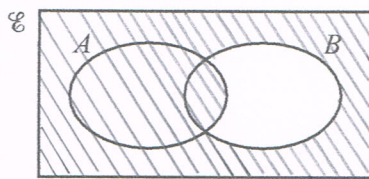
- 1 A concert hall has 1540 seats.

Calculate the number of people in the hall when 55% of the seats are occupied.

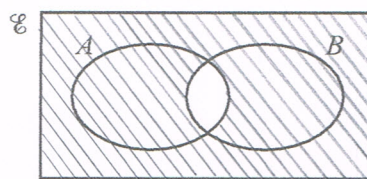
$$\frac{55}{100} \times 1540 = 847$$

Answer ..... 847 [1]

- 2 Shade the required region on each Venn diagram.



$A \cap B'$



$(A \cap B)'$

[2]

- 3 Calculate  $81^{0.25} \div 4^{-2}$ .

$$\begin{aligned} &= (3^4)^{\frac{1}{4}} \times 4^2 \\ &= 3 \times 16 \\ &= 48 \end{aligned}$$

Answer ..... 48 [2]

- 4 (a) Find  $m$  when  $4^m \times 4^2 = 4^{12}$ .

$$\begin{aligned} 4^{m+2} &= 4^{12} \\ m+2 &= 12 \\ m &= 12-2 \\ m &= 10 \end{aligned}$$

Answer(a)  $m =$  ..... 10 [1]

- (b) Find  $p$  when  $6^p \div 6^5 = \sqrt{6}$ .

$$\begin{aligned} 6^{p-5} &= 6^{\frac{1}{2}} \\ p-5 &= \frac{1}{2} \\ p &= \frac{1}{2} + 5 \\ p &= 5\frac{1}{2} \\ p &= 5.5 \end{aligned}$$

Answer(b)  $p =$  ..... 5.5 [1]