Exercise 1F

Question 6:

(i)

$$(25)^{\frac{3}{2}} = \left(5^2\right)^{\frac{3}{2}} = 5^{\left(2 \times \frac{3}{2}\right)}$$
$$= 5^3 = 125.$$

(ii)

$$(32)^{\frac{2}{5}} = \left(2^5\right)^{\frac{2}{5}} = (2)^{5 \times \frac{2}{5}} = 2^2 = 4.$$

(iii)

$$(81)^{\frac{3}{4}} = \left(3^4\right)^{\frac{3}{4}} = 3^{\left(4 \times \frac{3}{4}\right)} = 3^3 = 27.$$

Question 7:

(i)

$$(64)^{-\frac{1}{2}} = \frac{1}{(64)^{\frac{1}{2}}} = \frac{1}{\left(8^2\right)^{\frac{1}{2}}} = \frac{1}{(8)^{2 \times \frac{1}{2}}}$$
$$= \frac{1}{8^1} = \frac{1}{8}.$$

(ii)

$$(8)^{-\frac{1}{3}} = \frac{1}{(8)^{\frac{1}{3}}} = \frac{1}{\left(2^3\right)^{\frac{1}{3}}} = \frac{1}{2^{\left(3 \times \frac{1}{3}\right)}}$$
$$= \frac{1}{2^1} = \frac{1}{2}.$$

(iii)

$$(81)^{-\frac{1}{4}} = \frac{1}{(81)^{\frac{1}{4}}} = \frac{1}{\left(3^4\right)^{\frac{1}{4}}} = \frac{1}{3^{\left(4 \times \frac{1}{4}\right)}}$$
$$= \frac{1}{3^1} = \frac{1}{3}.$$

********** END **********