

$$3 \text{ (iv)} \quad (3^{-1} + 4^{-1} + 5^{-1})^0$$

$$= \left(\frac{1}{3} + \frac{1}{4} + \frac{1}{5} \right)^0$$

$$= \left(\frac{20 + 15 + 12}{60} \right)^0$$

$$= \left(\frac{47}{60} \right)^0$$

$$= 1$$

$$[\because x^0 = 1 \text{ if } x \neq 0]$$

$$3 \text{ (v)} \quad \left[\left(-\frac{2}{3} \right)^{-2} \right]^2 \quad \text{or}$$

$$\left[\left(-\frac{3}{2} \right)^2 \right]^2$$

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

$$= \left[\frac{(-3)^2}{2^2} \right]^2$$

$$= \left(\frac{9}{4} \right)^2$$

$$= \left(-\frac{2}{3} \right)^{-4}$$

$$= \frac{9^2}{4^2}$$

$$= \left(-\frac{3}{2} \right)^4$$

$$= \frac{81}{16}$$

$$= \frac{(-3)^4}{2^4}$$

$$= \frac{81}{16}$$