

Calculate the operations.

$$\begin{aligned} \text{(i)} \quad & 10 + 1100 \div 5 - 30 \\ & = 10 + (1100 \div 5) - 30 \\ & = 10 + 220 - 30 \\ & = 230 - 30 \\ & = 200 \end{aligned}$$

$$\begin{aligned} \text{(ii)} \quad & 40 + 80 \div (4 \times 5) \\ & = 40 + 80 \div (20) \\ & = 40 + 4 \\ & = 44 \end{aligned}$$

$$\begin{aligned} \text{(iii)} \quad & 16[-5 + (-2)] \times 2 \div (-2) - 4 \\ & = 16[-7] \times 2 \div (-2) - 4 \\ & = 16 \times 14 \div (-2) - 4 \\ & = 28 \times 2 \div (-2) - 4 \\ & = 280 \div (-2) - 4 \\ & = -140 - 4 \\ & = -144 \end{aligned}$$

$$\begin{aligned} \text{(iv)} \quad & 6(-8 + 2) \times (3 + 2) \div 10 \\ & = 6(-6) \times (5) \div 10 \\ & = -36 \times 5 \div 10 \\ & = -180 \div 10 \\ & = -18 \end{aligned}$$

Question 2

Simplify the following expressions.

$$\text{(i)} \quad \frac{x^2 + 2xm + m^2}{(x+m)^2}$$

$$\frac{x^2 + 2xm + m^2}{(x^2 + m^2)}$$

$$= (x+m)(x+m)$$

$$= x^2 + \cancel{xm} + \cancel{mx} + m^2$$

$$= \frac{x^2 + 2xm + m^2}{(x+m)^2}$$

$$= \frac{(x+m)(x+m)}{(x+m)^2}$$

$$= \frac{(x+m)^2}{(x+m)^2}$$

$$= 1$$

$$= \frac{x^2 + 2xm + m^2}{(x+m)^2} \text{ (ii)}$$

$$= \frac{x^2 + 2xm + m^2}{(x+m)(x+m)}$$

$$= \frac{x^2 + 2xm + m^2}{(x+m)(x+m)}$$

$$= \frac{x^2 + m^2 + 2xm}{(x+m)(x+m)}$$

$$= \frac{x^2 + m^2}{(x+m)^2}$$

$$= 1$$

$$\frac{b+2}{b^2+9b+20} \left(\frac{b+5}{b^2-4} \right)$$

$$\frac{b+2}{b^2+9b+20} \times \frac{b+5}{(b-2)(b+2)}$$

$$\frac{b+2}{b(b+5)+4(b+5)} \times \frac{b+5}{(b-2)(b+2)}$$

$$= \frac{1}{b(b+5)+4(b+5)} \times \frac{b+5}{(b-2)(b+2)}$$

$$= \frac{1}{(b+4)(b+5)} \times \frac{b+5}{b-2}$$

$$= \frac{b-2}{b+4} \times \frac{1}{b-2}$$

$$= \frac{1}{(b+4)(b-2)}$$

$$= \frac{1}{b^2 + 4b - 2b - 8}$$