



Factorizations Ex 7.5 Q21

Answer :

$$\begin{aligned} & \frac{1}{16} x^2 y^2 - \frac{4}{49} y^2 z^2 \\ &= y^2 \left(\frac{1}{16} x^2 - \frac{4}{49} z^2 \right) \\ &= y^2 \left[\left(\frac{1}{4} x \right)^2 - \left(\frac{2}{7} z \right)^2 \right] \\ &= y^2 \left(\frac{1}{4} x - \frac{2}{7} z \right) \left(\frac{1}{4} x + \frac{2}{7} z \right) \\ &= y^2 \left(\frac{x}{4} - \frac{2}{7} z \right) \left(\frac{x}{4} + \frac{2}{7} z \right) \end{aligned}$$

Factorizations Ex 7.5 Q22

Answer :

$$\begin{aligned} & 75a^3b^2 - 108ab^4 \\ &= 3ab^2 (25a^2 - 36b^2) \\ &= 3ab^2 \left[(5a)^2 - (6b)^2 \right] \\ &= 3ab^2 (5a - 6b) (5a + 6b) \end{aligned}$$

Factorizations Ex 7.5 Q23

Answer :

$$\begin{aligned}x^5 - 16x^3 \\&= x^3(x^2 - 16) \\&= x^3(x^2 - 4^2) \\&= x^3(x - 4)(x + 4)\end{aligned}$$

Factorizations Ex 7.5 Q24

Answer :

$$\begin{aligned}\frac{50}{x^2} - \frac{2x^2}{81} \\&= 2\left(\frac{25}{x^2} - \frac{x^2}{81}\right) \\&= 2\left\{\left(\frac{5}{x}\right)^2 - \left(\frac{x}{9}\right)^2\right\} \\&= 2\left(\frac{5}{x} - \frac{x}{9}\right)\left(\frac{5}{x} + \frac{x}{9}\right)\end{aligned}$$

Factorizations Ex 7.5 Q25

Answer :

$$\begin{aligned} & 256x^5 - 81x \\ &= x(256x^4 - 81) \\ &= x\left[\left(16x^2\right)^2 - 9^2\right] \\ &= x(16x^2 + 9)(16x^2 - 9) \\ &= x(16x^2 + 9)\left[\left(4x\right)^2 - 3^2\right] \\ &= x(16x^2 + 9)(4x + 3)(4x - 3) \end{aligned}$$

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