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Score
Format (PDF)
Presentation (Neat)
File Naming
Late
Total

Question 1

$$\begin{aligned}\left[\frac{4x^{-2}y^4}{y^{-2}}\right]\left[\frac{y^{-1}}{2x}\right] &= \frac{4x^{-2}y^4y^{-1}}{(y^{-2})\cancel{2}x} \\ &= 2x^{-2-1}y^{4+(-1)-(-2)} \\ &= 2x^{-3}y^{4-1+2} \\ &= 2x^{-3}y^5 \\ &= \frac{2y^5}{x^3} \quad \# \end{aligned}$$

Question 2

$$\begin{aligned}\frac{5-2\sqrt{3}}{2} &= \frac{5-2\sqrt{3}}{2} \left( \frac{5+2\sqrt{3}}{5+2\sqrt{3}} \right) \\ &= \frac{25 + 10\sqrt{3} - 10\sqrt{3} - 4\sqrt{3}(3)}{10 + 4\sqrt{3}} \\ &= \frac{25 - 4(3)}{10 + 4\sqrt{3}} \\ &= \frac{25 - 12}{10 + 4\sqrt{3}} \\ &= \frac{13}{10 + 4\sqrt{3}} \quad \# \end{aligned}$$

Question 3

$$\begin{aligned} & \sqrt[3]{24xy^3} - y\sqrt[3]{81x} \\ &= y\sqrt[3]{(8)(3)(x)} - y\sqrt[3]{(27)(3)(x)} \\ &= 2y\sqrt[3]{3x} - 3y\sqrt[3]{3x} \\ &= -y\sqrt[3]{3x} \quad \# \end{aligned}$$

Question 4

$$\begin{aligned} |x^3 - 3x^2| - 9x + 27 &= x^2(x-3) - 9(x-3) \\ &= (x-3)(x^2-9) \\ &= (x-3)(x-3)(x+3) \\ &= (x-3)^2(x+3) \quad \# \end{aligned}$$

Question 5

$$\begin{aligned} \frac{-8i}{1+2i} &= \frac{-8i}{1+2i} \left( \frac{1-2i}{1-2i} \right) \\ &= \frac{-8i + 16i^2}{1^2 + 2^2} \\ &= \frac{-8i + 16(-1)}{5} \\ &= \frac{-8i - 16}{5} \\ &= -\frac{16}{5} - \frac{8}{5}i \quad \# \end{aligned}$$