

HOMEWORK SET 1

Sections 1.1 – 1.3

p48: 1 – 8 & p47: 30, 32

1. Evaluate:

a. $|\pi - 2\sqrt{3}| - |\sqrt{3} - \sqrt{2}|$

b. $\left[\left(-\frac{1}{3} \right)^{-3} \right]^{1/3}$

2. Simplify:

a. $\sqrt{64x^6} \sqrt{9y^2x^6}$

b. $\left(\frac{a^{-3}}{b^{-4}} \right)^2 \left(\frac{b}{a} \right)^{-3}$

3. Rationalize the denominator:

a. $\frac{2x}{3\sqrt{y}}$

b. $\frac{x}{\sqrt{x-4}}$

4. Perform each operation and simplify:

a. $\frac{(x^2+1)\left(\frac{1}{2}x^{-1/2}\right) - x^{1/2}(2x)}{(x^2+1)^2}$

b. $-\frac{3x}{\sqrt{x+2}} + 3\sqrt{x+2}$

5. Rationalize the numerator: $\frac{\sqrt{x}+\sqrt{y}}{\sqrt{x}-\sqrt{y}}$.

6. Factor completely:

a. $12x^3 - 10x^2 - 12x$

b. $2bx - 2by + 3cx - 3cy$

7. Solve each equation:

a. $12x^2 - 9x - 3 = 0$

b. $3x^2 - 5x + 1 = 0$

8. Find the distance between $(-2,4)$ and $(6,8)$.

For questions 30 & 32, find the value(s) of x that satisfy the expression.

30. $\frac{1}{x+2} > 2$

32. $\left| \frac{x+1}{x-1} \right| = 5$