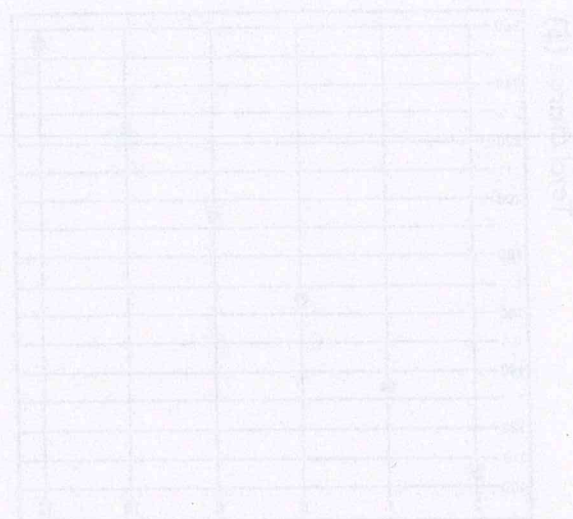


1. Simplify. $8\sqrt{48} + 7\sqrt{50} - 11\sqrt{192} - 3\sqrt{162}$



2. Solve each.

a. $\sqrt{5x + 34} - 8 = x$

b. $(4x - 1)^{\frac{2}{3}} + 13 = 38$

3. Simplify each. Use absolute value symbols as needed.

a. $\sqrt[4]{e^{38}g^{45}h^{15}}$

b. $\sqrt[3]{m^{31}n^{67}}$

ANSWERS

1. Simplify.

$$8\sqrt{48} + 7\sqrt{50} - 11\sqrt{192} - 3\sqrt{162}$$

$\begin{matrix} \wedge & \wedge & \wedge & \wedge \\ 16 \cdot 3 & 25 \cdot 2 & 64 \cdot 3 & 81 \cdot 2 \end{matrix}$

$$= 8 \cdot 4\sqrt{3} + 7 \cdot 5\sqrt{2} - 11 \cdot 8\sqrt{3} - 3 \cdot 9\sqrt{2}$$

$$= 32\sqrt{3} + 35\sqrt{2} - 88\sqrt{3} - 27\sqrt{2}$$

$$= \boxed{8\sqrt{2} - 56\sqrt{3}}$$

2. Solve each.

a. $\sqrt{5x+34} - 8 = x$
 $\quad \quad \quad +8 \quad +8$

$$\sqrt{5x+34} = x+8$$

$$(\sqrt{5x+34})^2 = (x+8)^2$$

$$5x+34 = x^2 + 16x + 64$$

$\begin{matrix} -5x & -34 & & -5x & -34 \end{matrix}$

$$0 = x^2 + 11x + 30$$

$$0 = (x+5)(x+6)$$

$$\boxed{x = -6, -5}$$

b. $(4x-1)^{\frac{2}{3}} + 13 = 38$
 $\quad \quad \quad -13 \quad -13$

$$(4x-1)^{\frac{2}{3}} = 25$$

$$\begin{aligned} [(4x-1)^{\frac{2}{3}}]^{\frac{3}{2}} &= (25)^{\frac{3}{2}} = (\sqrt{25})^3 \\ &= (\pm 5)^3 \\ &= \pm 125 \end{aligned}$$

$$4x-1 = \pm 125$$

$$\begin{array}{r} 4x-1 = 125 \\ +1 \quad +1 \\ \hline 4x = 126 \\ \frac{4x}{4} = \frac{126}{4} \end{array}$$

$$\begin{array}{r} 4x-1 = -125 \\ +1 \quad +1 \\ \hline 4x = -124 \\ \frac{4x}{4} = \frac{-124}{4} \end{array}$$

$$\boxed{x = 31.5, -31}$$

3. Simplify each. Use absolute value symbols as needed.

a. $\sqrt[4]{e^{38}g^{45}h^{15}}$

even root - might need abs. values.

$$\boxed{|e^9 g^{11} h^3| \sqrt[4]{e^2 g h^3}}$$

b. $\sqrt[3]{m^{31}n^{67}}$

odd root - NO abs values

$$\boxed{m^6 n^{13} \sqrt[5]{m n^2}}$$