Bellwork Alg 2 Thursday, February 13, 2020

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. $\sqrt[5]{m^{31}n^{67}}$

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ANSWERS

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

$16\cdot 3 \quad 25\cdot 2 \quad 64\cdot 3 \quad 81\cdot 2$

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

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

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

2. Solve each.

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

$+8 \quad +8$

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

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

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

$-5x \quad -34 \qquad -5x \quad -34$

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

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

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

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

$-13 \quad -13$

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

$\left[(4x-1)^{2/3}\right]^{3/2} = (25)^{3/2} = (\sqrt{25})^3$

$= (\pm 5)^3$

$= \pm 125$

$4x-1 = \pm 125$

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

$+1 \quad +1 \qquad +1 \quad +1$

$\frac{4x}{4} = \frac{126}{4} \qquad \frac{4x}{4} = \frac{-124}{4}$

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

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. $\sqrt[5]{m^{31}n^{67}}$

(ODD root – NO abs values)

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