Bellwork Hon Alg 2 Thursday, April 20, 2017

1. Simplify. Use Absolute Value symbols where necessary.

a) $\sqrt[3]{128a^{14}b^2c^{34}}$

b) $\sqrt[4]{27w^{12}x^{27}y^{23}}$

2. Rationalize the denominator. Simplify your answer. Assume all variable are positive.

a) $\dfrac{20bc^5}{\sqrt[4]{9b^7c^2d}}$

b) $\dfrac{12}{3+\sqrt{5}}$

3. Solve each.

a) $\sqrt{x+1}+5=x$

b) $5(2x-1)^{\frac{3}{2}}+9=144$

Bellwork Hon Alg 2 Thursday, April 20, 2017 Answers

1. Simplify. Use Absolute Value symbols where necessary.

a) $\sqrt[3]{128a^{14}b^2c^{34}}$ $64\cdot 2$ $\quad 4a^4c^{11}\sqrt[3]{2a^2b^2c}$

b) $\sqrt[4]{27w^{12}x^{27}y^{23}}$ $\quad |w^3|\,x^6\,|y^5|\sqrt[4]{27x^3}$

2. Rationalize the denominator. Simplify your answer. Assume all variable are positive.

a) $\dfrac{20bc^5}{\sqrt[4]{9b^7c^2d}}\cdot\dfrac{\sqrt[4]{3^2bc^2d^3}}{\sqrt[4]{3^2bc^2d^3}}=\dfrac{20c^4\sqrt[4]{9bc^2d^3}}{3bd}$ (3^2)

$=\dfrac{20bc^5\sqrt[4]{3^2bc^2d^3}}{\sqrt[4]{3^4b^8c^4d^4}}=\dfrac{20bc^5\sqrt[4]{3^2bc^2d^3}}{3b^2cd}$

b) $\dfrac{12}{3+\sqrt{5}}\cdot\dfrac{3-\sqrt{5}}{3-\sqrt{5}}=\dfrac{12(3-\sqrt{5})}{9-5}$

$=\dfrac{12(3-\sqrt{5})}{4}=\dfrac{3(3-\sqrt{5})}{1}$ or $9-3\sqrt{5}$

3. Solve each.

a) $\sqrt{x+1}+5=x$ $\quad -5\ \ -5$

$(\sqrt{x+1})^2=(x-5)^2$

$x+1=x^2-10x+25$

$0=x^2-11x+24$

$0=(x-8)(x-3)$

$x=8,3$ $\quad x=8$

b) $5(2x-1)^{\frac{3}{2}}+9=144$ $\quad -9\ \ -9$

$\dfrac{5(2x-1)^{3/2}}{5}=\dfrac{135}{5}$

$[(2x-1)^{3/2}]^{2/3}=(27)^{2/3}$

$2x-1=27^{2/3}$

$2x-1=9$

$2x=10$

$x=5$