Algebra 2 Bellwork Tuesday, March 1, 2016

Rationalize all denominators and simplify.

1. $\dfrac{12}{\sqrt[5]{8w^6x^3y^9}}$

Simplify each.

2. $\sqrt[4]{9a^6b^2} \cdot \sqrt[4]{33ab^{13}c^9} \cdot \sqrt[4]{18a^{11}c^3}$

3. $10\sqrt[3]{54} + \sqrt{8} - 2\sqrt[3]{16} + 5\sqrt{32}$

4. $(7+3\sqrt{6})(4-2\sqrt{6})$

Algebra 2 Bellwork Tuesday, March 1, 2016 Answers

Rationalize all denominators and simplify.

1. $\dfrac{12}{\sqrt[5]{8w^6x^3y^9}} \cdot \dfrac{\sqrt[5]{2^2w^4x^2y}}{\sqrt[5]{2^2w^4x^2y}} = \dfrac{12\sqrt[5]{2^2w^4x^2y}}{\sqrt[5]{2^5w^{10}x^5y^{10}}} = \dfrac{12\sqrt[5]{2^2w^4x^2y}}{2w^2xy^2} = \dfrac{6\sqrt[5]{2^2w^4x^2y}}{w^2xy^2}$

($8 = 2^3$)

Simplify each.

2. $\sqrt[4]{9a^6b^2} \cdot \sqrt[4]{33ab^{13}c^9} \cdot \sqrt[4]{18a^{11}c^3}$

($9 = 3^2$; $33 = 3 \cdot 11$; $18 = 9 \cdot 2 = 3^2 \cdot 2$)

$= \sqrt[4]{3^5 \cdot 11 \cdot 2\, a^{18} b^{15} c^{12}}$

$= 3a^4b^3c^3\sqrt[4]{66a^2b^3}$

3. $10\sqrt[3]{54} + \sqrt{8} - 2\sqrt[3]{16} + 5\sqrt{32}$

($54 = 27 \cdot 2$; $8 = 4 \cdot 2$; $16 = 8 \cdot 2$; $32 = 16 \cdot 2$)

$= 30\sqrt[3]{2} + 2\sqrt{2} - 4\sqrt[3]{2} + 20\sqrt{2}$

$= 22\sqrt{2} + 26\sqrt[3]{2}$

4. $(7+3\sqrt{6})(4-2\sqrt{6})$

	4	$-2\sqrt{6}$
7	28	$-14\sqrt{6}$
$+3\sqrt{6}$	$+12\sqrt{6}$	-36

$= -8 - 2\sqrt{6}$