

Bellwork 1-21-16

Let $f(x)=3x-6$ and $g(x)=-2x+7$

1. Find $f(g(-5))$. $g(-5) = -2(-5) + 7 = 10 + 7 = 17$
 $f(17) = 3(17) - 6 = 51 - 6 = 45$

2. Find $(g \circ f)(x)$. $g(f(x)) = -2(3x-6) + 7 = -6x + 12 + 7 = -6x + 19$

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Radical Expressions

What is $\sqrt{32}$? $2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 = 4 \cdot 2 = 4\sqrt{2}$

What is $\sqrt{20x^3}$? $2 \cdot 2 \cdot 5 \cdot x \cdot x \cdot x = 2x\sqrt{5x}$

What is $\sqrt[4]{8}$? $2 \cdot 2 \cdot 2 = 2$
 Index

The **index number** tells us how many of the same number we need together to get out from under the radical. (If you don't see a number, it's a 2 for square root.)

What is $\sqrt[5]{32x^6}$? $2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot x \cdot x \cdot x \cdot x \cdot x = 2x\sqrt[5]{x}$

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Example 1: $\sqrt[4]{16x^6y^5} = 2xy\sqrt{x^2y}$

Example 2: $\sqrt[3]{81x^4y^{12}} = -6xy^4\sqrt[3]{3x}$

Example 3: $\sqrt[4]{16x^{12}y^8z^4} = 2x^3y^2z$

Example 4: $\sqrt[3]{\frac{64}{x^3}} = \frac{4}{x}$

Example 5: $\sqrt[4]{\frac{27x^5}{y^8}} = \frac{x\sqrt[4]{27x}}{y^2}$

Example 6: $\frac{2}{\sqrt{20}} = \frac{2 \cdot \sqrt{5}}{\sqrt{20} \cdot \sqrt{5}} = \frac{2\sqrt{5}}{\sqrt{100}} = \frac{2\sqrt{5}}{10} = \frac{\sqrt{5}}{5}$

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Conclusion

1. What is the number outside of the radical called?
Index
2. What does the index number mean?
How many to take out
3. Can you leave a radical in the denominator?
Never
4. Questions???

Jan 16-9:11 AM

Assignment
Radical Expressions Wkst

Add these problems to the back.

Let $f(x)=2x-5$ and $g(x)=-4x+1$

15. Find $f(g(x))$

16. Find $(g \circ f)(2)$

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