Preview 5 and Recap 5

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Preview 5

PREVIEW

1. Evaluate each of these radicals, if possible.

a) $\sqrt{16}$ b) $\sqrt{3^2}$

c) $\sqrt{(-5)^2}$ d) $\sqrt{-4}$

e) $\sqrt[4]{81}$ f) $\sqrt[4]{-16}$

2. Evaluate each of these radicals, if possible.

a) $\sqrt[3]{8}$ b) $\sqrt[3]{-8}$

c) $\sqrt[3]{0}$ d) $\sqrt[3]{(-6)^3}$

e) $\sqrt[4]{81}$ f) $\sqrt[4]{-16}$

Recap 5

Preview 5

PREVIEW

1. Evaluate each of these radicals, if possible.

a) $\sqrt{16} = 4$ b) $\sqrt{3^2} = 3$

c) $\sqrt{(-5)^2} = +5$ d) $\sqrt{-4}$ = undefined

e) $\sqrt[4]{81} = 3$ f) $\sqrt[4]{-16}$ = undefined

2. Evaluate each of these radicals, if possible.

a) $\sqrt[3]{8} = 2$ b) $\sqrt[3]{-8} = -2$

c) $\sqrt[3]{0} = 0$ d) $\sqrt[3]{(-6)^3} = -6$

e) $\sqrt[4]{81} = 3$ f) $\sqrt[4]{-16}$ = undefined

Recap 5

RECAP

1. Simplify this radical expression and state the values of x for which the radical is defined.

$$\sqrt{32x^3}$$

2. Simplify.

a) $\sqrt{12}-\sqrt{27}+\sqrt{48}=$

b) $\sqrt[3]{8x^5y}+5\sqrt[3]{x^5y}-x\sqrt[3]{27x^2y}=$

RECAP

1. Simplify this radical expression and state the values of x for which the radical is defined.

$\sqrt{32x^3} = \sqrt{16\cdot 2\cdot x^2\cdot x}$

$= 4x\sqrt{2x}$

$32x^3 \geq 0$

$x^3 \geq 0$

$x \geq 0$

(no absolute value needed, because $x \geq 0$)

2. Simplify.

a) $\sqrt{12}-\sqrt{27}+\sqrt{48}=$ $\sqrt{4\cdot 3}-\sqrt{9\cdot 3}+\sqrt{16\cdot 3}$

$= 2\sqrt{3}-3\sqrt{3}+4\sqrt{3}$

$= (2-3+4)\sqrt{3}$

$= 3\sqrt{3}$

b) $\sqrt[3]{8x^5y}+5\sqrt[3]{x^5y}-x\sqrt[3]{27x^2y}=$

$\sqrt[3]{8x^3\cdot x^2y}+5\sqrt[3]{x^3\cdot x^2y}-x\sqrt[3]{27x^2y}$

$= 2x\sqrt[3]{x^2y}+5x\sqrt[3]{x^2y}-3x\sqrt[3]{x^2y}$

$= (2x+5x-3x)\sqrt[3]{x^2y}$

$= 4x\sqrt[3]{x^2y}$