

Bellwork Alg 2B Tuesday, September 19, 2017

Rationalize each denominator. Simplify if possible.

1. $\frac{8}{\sqrt{50}}$

2. $\frac{13}{\sqrt[5]{27}}$

3. $\frac{24}{\sqrt[3]{40}}$

4. $\frac{12a}{\sqrt{6a^3}}$

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Rationalize each denominator. Simplify if possible.

Answers

1. $\frac{8}{\sqrt{50}} \cdot \frac{\sqrt{2}}{\sqrt{2}}$

$= \frac{8\sqrt{2}}{\sqrt{100}}$

$= \frac{8\sqrt{2}}{10} = \frac{4\sqrt{2}}{5}$

2. $\frac{13}{\sqrt[5]{27}} = \frac{13}{\sqrt[5]{3^3}} \cdot \frac{\sqrt[5]{3^2}}{\sqrt[5]{3^2}} = \frac{13\sqrt[5]{3^2}}{\sqrt[5]{3^5}}$

$= \frac{13\sqrt[5]{3^2}}{3}$

3. $\frac{24}{\sqrt[3]{40}} = \frac{24}{\sqrt[3]{8 \cdot 5}} \cdot \frac{\sqrt[3]{5^2}}{\sqrt[3]{5^2}}$

$= \frac{24\sqrt[3]{5^2}}{\sqrt[3]{8 \cdot 5^3}}$

$= \frac{24\sqrt[3]{5^2}}{2 \cdot 5} = \frac{12\sqrt[3]{5^2}}{5}$

4. $\frac{12a}{\sqrt{6a^3}} \cdot \frac{\sqrt{6a}}{\sqrt{6a}} = \frac{12a\sqrt{6a}}{\sqrt{36a^4}}$

$= \frac{12a\sqrt{6a}}{6a^2}$

$= \frac{2\sqrt{6a}}{a}$