14. $5\sqrt{12} + \sqrt{75}$

Put quiz in clicker

* if you dont have $\sqrt{}$ use "sqr"

12.4 D2

Division

12.5 D1

Multiplication

Simplify

1. $\sqrt{36} \rightarrow \sqrt[2]{6^2}$

2. $\sqrt{75} \rightarrow \sqrt[2]{5^2 \cdot 3} = 5\sqrt{3}$

Rules 3. Can't leave a fraction inside a $\sqrt{}$

4. Can't leave a $\sqrt{}$ in denominator

divide 12.4.D2

$$\frac{\sqrt{8}}{\sqrt{2}} = \sqrt{\frac{8}{2}} \rightarrow \sqrt{4} = 2$$

$$\sqrt{\frac{15}{16}} = \frac{\sqrt{15}}{\sqrt{16}} \rightarrow \frac{\sqrt{15}}{4}$$

35. $\sqrt{\dfrac{8x^3}{25y^6}}$

37. $\sqrt[3]{\dfrac{x^4}{8y^3}}$

$\sqrt{\dfrac{8x^3}{25y^6}} \rightarrow \dfrac{\sqrt{8x^3}}{\sqrt{25y^6}} \rightarrow \dfrac{\sqrt{2^2 \cdot 2 \cdot x^2 \cdot x}}{\sqrt{5^2 y^6}}$

$\sqrt[3]{\dfrac{x^4}{8y^3}} \rightarrow \dfrac{\sqrt[3]{x^4}}{\sqrt[3]{8y^3}} \rightarrow \dfrac{\sqrt[3]{x^3 \cdot x}}{\sqrt[3]{(2y)^3}}$

$\dfrac{2x\sqrt{2x}}{5y^3}$

$\dfrac{x\sqrt[3]{x}}{2y}$

43. $\sqrt[5]{\dfrac{64x^{13}}{y^{20}}}$ →

$$\frac{\sqrt[5]{64x^{13}}}{\sqrt[5]{y^{20}}}$$

2 | 64
2 | 32
2 | 16
2 | 8
2 | 4
2

$$\frac{\sqrt[5]{2^5 \cdot 2^1 \cdot x^{10} \cdot x^3}}{\sqrt[5]{y^{20}}}$$

$$\frac{2x^2\sqrt[5]{2x^3}}{y^4}$$

45. $\dfrac{\sqrt{40}}{\sqrt{5}}$

$\dfrac{\sqrt{40}}{\sqrt{5}} \rightarrow \sqrt{\dfrac{40}{5}} \rightarrow \sqrt{8}$

$\sqrt{2^2 \cdot 2}$

$2\sqrt{2}$

47. $\dfrac{\sqrt[3]{48}}{\sqrt[3]{6}}$

$\dfrac{\sqrt[3]{48}}{\sqrt[3]{6}} \rightarrow \sqrt[3]{\dfrac{48}{6}} \rightarrow \sqrt[3]{8}$

$\sqrt[3]{2^3}$

2

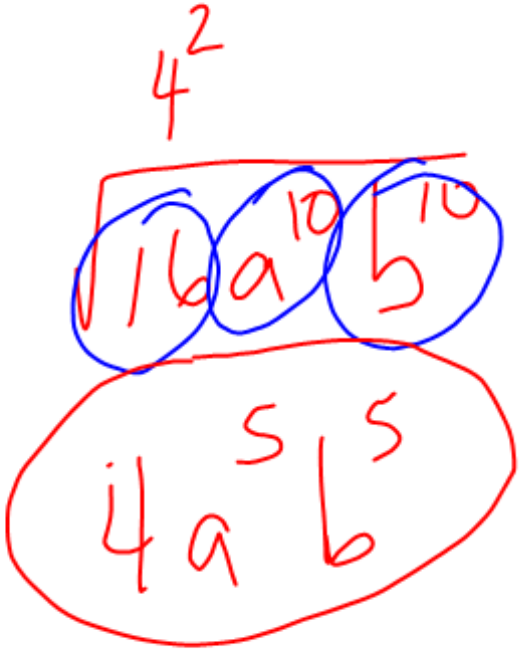
Simplify

49. $\dfrac{\sqrt{54x^3}}{\sqrt{6x}}$

$\sqrt{\dfrac{54x^3}{6x}} \rightarrow \sqrt{9x^2}$

$3x$

55. $\dfrac{\sqrt{48a^8b^7}}{\sqrt{3a^{-2}b^{-3}}}$



Simplify

61. $\dfrac{\sqrt[4]{32x^{10}y^8}}{\sqrt[4]{2x^2y^{-2}}}$

$\sqrt[4]{\dfrac{32x^{10}y^8}{2x^2y^{-2}}} \rightarrow \sqrt[4]{16x^8y^{10}}$

$\sqrt[4]{2^4 \cdot x^8 \cdot y^8 \cdot y^2}$

end of 12.4 D2

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

$y^{\frac{2}{4}} = y^{\frac{1}{2}}$

$2x^2y^2\sqrt{y}$

12.5D1 multiply

$\sqrt[2]{3} \cdot \sqrt[2]{6} = \sqrt{18} = \sqrt{3^2 \cdot 2} = 3\sqrt{2}$

2|18
3|9
3

Simplify

$$\frac{1}{}\sqrt{5}\left(\frac{2}{}\sqrt{10}+\sqrt{5}\right)$$

$$2\sqrt{5^2\cdot 2}+5$$

$$10\sqrt{2}+5$$

$$(\sqrt{2}+\sqrt{6})(\sqrt{6}-\sqrt{8})$$

F O I L

$$\sqrt{2^2\cdot 3}-\sqrt{4^2}+6-\sqrt{2\cdot 3\cdot 2\cdot 2\cdot 2}$$

$$\sqrt{2^2\cdot 2^2\cdot 3}$$

$$2\sqrt{3}-4+6-4\sqrt{3}$$

$$=\quad =$$

$$2-2\sqrt{3}$$

Simplify

$$(2\sqrt{5} - 3\sqrt{2})(4\sqrt{10} + 3\sqrt{2})$$

F O I L

$$8\sqrt{5^2 2} + 6\sqrt{10} - 12\sqrt{2^2 5} - 9 \cdot 2$$

$$40\sqrt{2} + 6\sqrt{10} - 24\sqrt{5} - 18$$

conjugates

$$(\sqrt{3} + \sqrt{5})(\sqrt{3} - \sqrt{5})$$

$$3 - 5$$

$$-2$$

Simplify $(2\sqrt{5} + 3\sqrt{10})(2\sqrt{5} - 3\sqrt{10})$

(F) $4\cdot 5 - 9\cdot 10$ (L) $\rightarrow 20 - 90$

-70

Simplify $(\sqrt{2} + \sqrt{5})^2$

$(\sqrt{2} + \sqrt{5})(\sqrt{2} + \sqrt{5})$

$2 + \sqrt{10} + \sqrt{10} + 5$

$7 + 2\sqrt{10}$

end 12.5 D1