

Rationalizing Denominators Worksheet

Name _____

Simplify the first 15 perfect square roots.

$$\sqrt{1} = 1$$

$$\sqrt{25} = \underline{5}$$

$$\sqrt{9} = \underline{3}$$

$$\sqrt{4} = 2$$

$$\sqrt{100} = \underline{10}$$

$$\sqrt{64} = \underline{8}$$

$$\sqrt{121} = \underline{11}$$

$$\sqrt{36} = \underline{6}$$

$$\sqrt{196} = \underline{14}$$

$$\sqrt{81} = \underline{9}$$

$$\sqrt{16} = \underline{4}$$

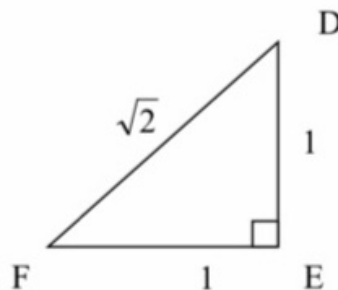
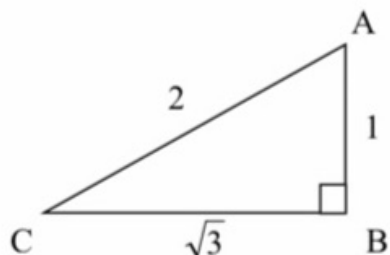
$$\sqrt{49} = \underline{7}$$

$$\sqrt{144} = \underline{12}$$

$$\sqrt{225} = \underline{15}$$

$$\sqrt{169} = \underline{13}$$

Find each ratio. Rationalize the denominator when possible.



$$a.) \frac{AB}{AC} = \frac{1}{2} \cdot \frac{\sqrt{3}}{\sqrt{3}} \rightarrow \frac{\sqrt{3}}{2}$$

$$d.) \frac{AB}{CB} = \frac{1}{\sqrt{3}}$$

$$g.) \frac{DF}{FE} = \frac{\sqrt{2}}{1} = \sqrt{2}$$

$$b.) \frac{DE}{EF} = \frac{1}{1} = 1$$

$$e.) \frac{BC}{AC} = \frac{\sqrt{3}}{2}$$

$$h.) \frac{AC}{AB} = \frac{2}{1} = 2$$

$$c.) \frac{EF}{DF} = \frac{1}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{2}}{2}$$

$$f.) \frac{DE}{DF} = \frac{1}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{2}}{2}$$

$$i.) \frac{AC}{CB} = \frac{2}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{2\sqrt{3}}{3}$$

Rationalize each denominator and write in simplest form.

$$1. \frac{1}{\sqrt{2}} \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{2}}{2}$$

$$2. \frac{2}{\sqrt{3}} \frac{\sqrt{3}}{\sqrt{3}} = \frac{2\sqrt{3}}{3}$$

$$3. \frac{1}{\sqrt{7}} \frac{\sqrt{7}}{\sqrt{7}} = \frac{\sqrt{7}}{7}$$

$$4. \frac{6}{\sqrt{2}} \frac{\sqrt{2}}{\sqrt{2}} = \frac{6\sqrt{2}}{2} = 3\sqrt{2}$$

$$5. \frac{15}{\sqrt{5}} \frac{\sqrt{5}}{\sqrt{5}} = \frac{15\sqrt{5}}{5} = 3\sqrt{5}$$

$$6. \frac{42}{\sqrt{7}} \frac{\sqrt{7}}{\sqrt{7}} = \frac{42\sqrt{7}}{7} = 6\sqrt{7}$$

$$7. \frac{1}{\sqrt{81}} = \frac{1}{9}$$

$$8. \frac{2}{\sqrt{11}} \frac{\sqrt{11}}{\sqrt{11}} = \frac{2\sqrt{11}}{11}$$

$$9. \frac{4}{\sqrt{2}} \frac{\sqrt{2}}{\sqrt{2}} = \frac{4\sqrt{2}}{2} = 2\sqrt{2}$$

10. $\frac{1}{\sqrt{3}} \frac{\sqrt{3}}{\sqrt{3}} = \frac{\sqrt{3}}{3}$

11. $\frac{1}{\sqrt{225}} = \frac{1}{15}$

12. $\frac{1}{3\sqrt{16}} = \frac{1}{3 \cdot 4} = \frac{1}{12}$

13. $\frac{8}{3\sqrt{2}} = \frac{8}{3\sqrt{2}} \frac{\sqrt{2}}{\sqrt{2}} = \frac{8\sqrt{2}}{6} = \frac{4\sqrt{2}}{3}$

14. $\frac{2}{\sqrt{3}} \frac{\sqrt{3}}{\sqrt{3}} = \frac{2\sqrt{3}}{3}$

15. $\frac{1}{\sqrt{2}} \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{2}}{2}$

16. $\frac{1}{\sqrt{12}} \rightarrow \frac{1}{2\sqrt{3}} \frac{\sqrt{3}}{\sqrt{3}} = \frac{\sqrt{3}}{2 \cdot 3} = \frac{\sqrt{3}}{6}$

17. $\frac{11}{\sqrt{121}} = \frac{11}{11} = 1$

18. $\frac{12}{\sqrt{36}} = \frac{12}{6} = 2$

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