

Name Key

## Algebra I Practice Quiz 10.2

Simplify each expression. Circle your answer.

1.  $\sqrt{60}$

$$\sqrt{4} \sqrt{15}$$
$$2\sqrt{15}$$

2.  $\sqrt{45}$

$$\sqrt{9} \sqrt{5}$$

$$3\sqrt{5}$$

3.  $\sqrt{75}$ 

$$\sqrt{25} \sqrt{3}$$

$$5\sqrt{3}$$

4.  $\sqrt{700}$ 

$$\begin{array}{l} \sqrt{100} \sqrt{7} \\ 10\sqrt{7} \end{array}$$

5.  $\sqrt{6} \cdot \sqrt{3}$

$$\sqrt{18}$$
$$\sqrt{9} \sqrt{2}$$
$$3\sqrt{2}$$

6.  $\sqrt{3} \cdot \sqrt{8}$

$$\sqrt{24}$$
$$\sqrt{4} \sqrt{6}$$
$$\sqrt{2 \cdot 2 \cdot 2 \cdot 3}$$

7.  $5\sqrt{6} \cdot \sqrt{6}$

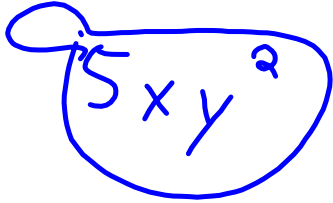
$$5\sqrt{36} \quad 5 \cdot 6 = \textcircled{30}$$

8.  $3\sqrt{2} \cdot 4\sqrt{6}$

$$\begin{aligned} & 12\sqrt{12} \\ & = 12 \cdot 2\sqrt{3} \\ & = 24\sqrt{3} \end{aligned}$$

9.

$$\sqrt{25x^2y^4}$$



A handwritten blue ink solution for the square root of  $25x^2y^4$ . The expression  $5xy^2$  is written inside a hand-drawn blue oval. A small blue circle is drawn above the number 5, with a line pointing to it from the left, indicating the square root of 25.

10.  $\sqrt{63x^6y^7}$

$$\sqrt{9} \sqrt{7}$$

$$3x^3y^3\sqrt{7y}$$

11.  $\sqrt{\frac{3}{7}} \cdot \frac{\sqrt{7}}{\sqrt{7}} \left( \frac{\sqrt{21}}{7} \right)$

12.  $\sqrt{\frac{36}{81}}$

$$\frac{6}{9} = \frac{2}{3}$$

$$13. \quad \frac{3}{7-\sqrt{2}} \cdot \frac{7+\sqrt{2}}{7+\sqrt{2}}$$
$$\frac{21+3\sqrt{2}}{49-5\cancel{\sqrt{2}}_2} = \frac{21+3\sqrt{2}}{47}$$

$$14. \quad \frac{2}{\sqrt{6}+1} \frac{\sqrt{6}-1}{\sqrt{6}-1}$$
$$\frac{2\sqrt{6}-2}{\sqrt{36}-1} = \frac{2\sqrt{6}-2}{5}$$

15.  $\sqrt{24}$

$$\frac{\sqrt{4} \sqrt{6}}{2\sqrt{6}}$$

16.  $3\sqrt{2} \cdot -5\sqrt{7}$

$$-15\sqrt{14}$$

17.  $\sqrt{\frac{1}{5}}$

$$\frac{\sqrt{1}}{\sqrt{5}} \cdot \frac{\sqrt{5}}{\sqrt{5}}$$

$$\frac{\sqrt{5}}{\sqrt{25}}$$

$$\frac{\sqrt{5}}{5}$$

$$18. \quad \sqrt{\frac{12}{x^2}} = \frac{\sqrt{12}}{x} = \frac{\sqrt{4}\sqrt{3}}{x} \\ = \frac{2\sqrt{3}}{x}$$

19.  $\frac{\sqrt{2}}{3+\sqrt{5}} \cdot \frac{3-\sqrt{5}}{3-\sqrt{5}}$

$$\frac{3\sqrt{2}-\sqrt{10}}{4}$$

$$\frac{3\sqrt{2}-\sqrt{10}}{9-\sqrt{25}}$$

$$\frac{3\sqrt{2}-\sqrt{10}}{9-5=4}$$

20.  $\sqrt{32xy^4}$

$$\sqrt{16} \sqrt{2}$$

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

21.  $\sqrt{98}$

$$\sqrt{49} \sqrt{2}$$
$$\underline{7\sqrt{2}}$$

22.  $\sqrt{48}$

$$\sqrt{16} \sqrt{3}$$

$$4\sqrt{3}$$

23.  $\sqrt{5} \cdot \sqrt{20}$

$$\sqrt{100}$$

$$\textcircled{10}$$

24.  $\sqrt{8} \cdot \sqrt{10}$

$$\sqrt{80}$$

$$\sqrt{16} \sqrt{5}$$

$$4\sqrt{5}$$

