

Section 12.2 Worksheet

Name: LEY

Simplify the expression.

$$1.) \sqrt{200}$$

$$\sqrt{100} \sqrt{2}$$

$$\boxed{10\sqrt{2}}$$

$$2.) \sqrt{45}$$

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

$$\boxed{3\sqrt{5}}$$

$$3.) \sqrt{32}$$

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

$$\boxed{4\sqrt{2}}$$

$$4.) \sqrt{27}$$

$$\sqrt{9} \sqrt{3}$$

$$\boxed{3\sqrt{3}}$$

$$5.) \sqrt{12}$$

$$\sqrt{4} \sqrt{3}$$

$$\boxed{2\sqrt{3}}$$

$$6.) \sqrt{20}$$

$$\sqrt{4} \sqrt{5}$$

$$\boxed{2\sqrt{5}}$$

Simplify the expression.

$$7.) \sqrt{3} \cdot \sqrt{21}$$

$$\sqrt{63}$$

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

$$\boxed{3\sqrt{7}}$$

$$8.) \sqrt{5} \cdot \sqrt{10}$$

$$\sqrt{50}$$

$$\sqrt{25} \sqrt{2}$$

$$\boxed{5\sqrt{2}}$$

$$9.) \sqrt{10} \cdot \sqrt{2}$$

$$\sqrt{20}$$

$$\sqrt{4} \sqrt{5}$$

$$\boxed{2\sqrt{5}}$$

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

$$3\sqrt{10} + \sqrt{25}$$

$$\boxed{3\sqrt{10} + 5}$$

$$11.) \sqrt{3}(\sqrt{12} - 6\sqrt{3})$$

$$\sqrt{36} - 6\sqrt{9}$$

$$6 - 6 \cdot 3$$

$$6 - 18$$

$$\boxed{-12}$$

$$12.) (\sqrt{5} + 2)(\sqrt{5} - 2)$$

$$\sqrt{25} - 2\sqrt{5} + 2\sqrt{5} - 4$$

$$5 - 4$$

$$\boxed{1}$$

Simplify the expression by rationalizing the denominator.

$$13.) \frac{3}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}}$$

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

$$\boxed{\frac{3\sqrt{2}}{2}}$$

$$14.) \frac{7}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}}$$

$$\frac{7\sqrt{3}}{\sqrt{9}}$$

$$\boxed{\frac{7\sqrt{3}}{3}}$$

$$15.) \sqrt{\frac{16}{75}}$$

$$\frac{\sqrt{16}}{\sqrt{75}} \cdot \frac{\sqrt{75}}{\sqrt{75}}$$

$$\frac{4\sqrt{75}}{\sqrt{5625}}$$

$$\frac{4 \cdot 5\sqrt{3}}{75}$$

$$\boxed{\frac{20\sqrt{3}}{75}}$$

$$\boxed{\frac{4\sqrt{3}}{15}}$$

Simplify the expression.

16.) $10\sqrt{7} + 3\sqrt{7}$

$13\sqrt{7}$

17.) $4\sqrt{5} - 7\sqrt{5}$

$-3\sqrt{5}$

18.) $4\sqrt{3} - 2\sqrt{3}$

$2\sqrt{3}$

19.) $12\sqrt{6} + 5\sqrt{6} - 2\sqrt{6}$

$15\sqrt{6}$

20.) $\sqrt{32} + 2\sqrt{2}$

$\sqrt{16} \sqrt{2} + 2\sqrt{2}$
 $4\sqrt{2} + 2\sqrt{2}$
 $6\sqrt{2}$

21.) $\sqrt{12} - 2\sqrt{3}$

$\sqrt{4} \sqrt{3} - 2\sqrt{3}$
 $2\sqrt{3} - 2\sqrt{3}$
 0

22.) $\sqrt{18} - \sqrt{2}$

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

23.) $\sqrt{28} - \sqrt{63}$

$\sqrt{4} \sqrt{7} - \sqrt{9} \sqrt{7}$
 $2\sqrt{7} - 3\sqrt{7}$
 $-\sqrt{7}$

24.) $\sqrt{20} + \sqrt{80}$

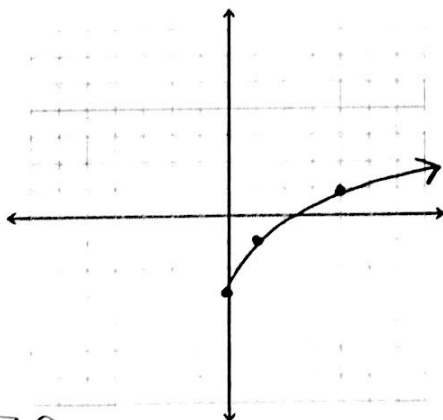
$\sqrt{4} \sqrt{5} + \sqrt{16} \sqrt{5}$
 $2\sqrt{5} + 4\sqrt{5}$
 $6\sqrt{5}$

REVIEW:

Graph the function. State the domain and range.

25.) $y = 2\sqrt{x} - 3$

x	y
0	-3
1	-1
4	1
9	3
16	5

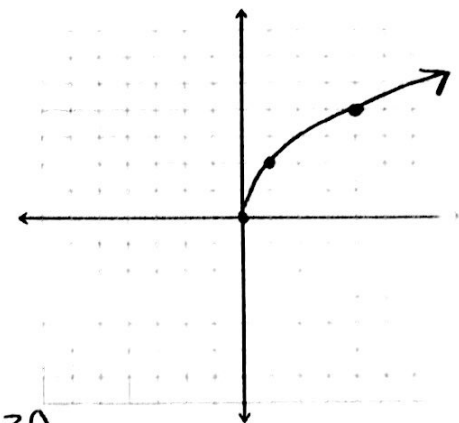


Domain: $x \geq 0$

Range: $y \geq -3$

26.) $y = 2\sqrt{x}$

x	y
0	0
1	2
4	4
9	6
16	8



Domain: $x \geq 0$

Range: $y \geq 0$