

Radicals

Date _____ Period _____

Simplify.

1) $3\sqrt{2} + 5\sqrt{2}$
 $8\sqrt{2}$

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

3) $5\sqrt{3} - \sqrt{3}$
 $4\sqrt{3}$

4) $2\sqrt{6} - 4\sqrt{6}$
 $-2\sqrt{6}$

5) $-4\sqrt{2} + 4\sqrt{2}$
 0

6) $\sqrt{6} \cdot \sqrt{5}$
 $\sqrt{30}$

7) $\sqrt{2} \cdot \sqrt{8}$
 4

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

9) $\sqrt{6}(4 + \sqrt{2})$
 $4\sqrt{6} + 2\sqrt{3}$

10) $\sqrt{15}(2\sqrt{6} + 4\sqrt{2})$
 $6\sqrt{10} + 4\sqrt{30}$

$$11) \frac{2\sqrt{6}}{3\sqrt{2}}$$
$$\frac{2\sqrt{3}}{3}$$

$$12) \frac{2\sqrt{20}}{3\sqrt{4}}$$
$$\frac{2\sqrt{5}}{3}$$

$$13) \frac{\sqrt{4}}{5\sqrt{36}}$$
$$\frac{1}{15}$$

$$14) \frac{2\sqrt{2}}{\sqrt{32}}$$
$$\frac{1}{2}$$

$$15) \frac{3\sqrt{10}}{2\sqrt{2}}$$
$$\frac{3\sqrt{5}}{2}$$

$$16) (27x^6)^{\frac{2}{3}}$$
$$9x^4$$

$$17) (49x^2)^{\frac{3}{2}}$$
$$343x^3$$

$$18) (243x^{10})^{\frac{6}{5}}$$
$$729x^{12}$$

$$19) (\sqrt[4]{2m})^5$$
$$(2m)^{\frac{5}{4}}$$

$$20) \sqrt{5x}$$
$$(5x)^{\frac{1}{2}}$$