

Algebra 2

Name \_\_\_\_\_ ID: 1

Supplement quiz review

Simplify.

$$1) -\sqrt{8} + 2\sqrt{3} - \sqrt{12}$$

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

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

$$-2\sqrt{2}$$

$$2) -\sqrt{3} + 2\sqrt{12} + 2\sqrt{8}$$

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

$$-1\sqrt{3} + 4\sqrt{3} + 4\sqrt{2}$$

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

$$3) 2\sqrt{8} + 2\sqrt{24} - 3\sqrt{2}$$

$$4) -\sqrt{45} - \sqrt{18} + 3\sqrt{2}$$

$$5) 2\sqrt{3} + 3\sqrt{27} + 2\sqrt{12}$$

$$6) 2\sqrt{27} - 2\sqrt{3} - 3\sqrt{45}$$

$$7) \frac{\sqrt{6}}{\sqrt{50}} \cdot \frac{\sqrt{50}}{\sqrt{50}} = \frac{\sqrt{300}}{50}$$

$$8) \frac{\sqrt{3}}{\sqrt{12}}$$

$$\frac{\sqrt{100}\sqrt{3}}{50} = \frac{10\sqrt{3}}{50}$$

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

9)  $\frac{\sqrt{15}}{\sqrt{20}}$

10)  $\frac{4\sqrt{6}}{2\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{4\sqrt{18}}{2 \cdot 3} = \frac{4\sqrt{9}\sqrt{2}}{6}$   
 $\frac{\cancel{4}^2\sqrt{2}}{\cancel{6}_2} = 2\sqrt{2}$

11)  $\frac{\sqrt{2}}{\sqrt{32}}$

12)  $\frac{\sqrt{10}}{2\sqrt{5}} \cdot \frac{\sqrt{5}}{\sqrt{5}} = \frac{\sqrt{50}}{2 \cdot 5} = \frac{\sqrt{25 \cdot 2}}{10}$   
 $= \frac{\cancel{5}\sqrt{2}}{\cancel{10}_2} = \frac{\sqrt{2}}{2}$

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

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

15)  $\sqrt{5}(\sqrt{2} + \sqrt{6})$

16)  $\sqrt{6}(-5\sqrt{3} + \sqrt{10})$   
 $-5\sqrt{18} + \sqrt{60}$   
 $-5\sqrt{9}\sqrt{2} \quad \sqrt{4}\sqrt{15}$   
 $-15\sqrt{2} + 2\sqrt{15}$

$(2 + \sqrt{5})^2$   
 $(2 + \sqrt{5})(2 + \sqrt{5})$   
 $4 + 2\sqrt{5} + 2\sqrt{5} + 5$   
 $9 + 4\sqrt{5}$

-2-

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

18)  $(2\sqrt{6} - 2)(\sqrt{2} + 2)$

19)  $(5 + \sqrt{3})(-3 - 4\sqrt{3})$

20)  $(4\sqrt{3} + \sqrt{2})(\sqrt{3} + \sqrt{7})$

21)  $(-2\sqrt{2} - 3)(5\sqrt{3} - 5)$   
 $-10\sqrt{6} + 10\sqrt{2} - 15\sqrt{3} + 15$

22)  $(\sqrt{3} - 3)(-5\sqrt{3} + 1)$

23)  $(-5 + \sqrt{3})(5 + \sqrt{6})$

24)  $(\sqrt{3} + \sqrt{5})(\sqrt{5} - 5\sqrt{6})$   
 $\sqrt{15} - 5\sqrt{18} + 5 - 5\sqrt{30}$   
 $\sqrt{15} - 15\sqrt{2} + 5 - 5\sqrt{30}$

Solve each equation by taking square roots.

25)  $n^2 = 3$   
 $n = \pm\sqrt{3}$

26)  $r^2 = 64$

27)  $n^2 = 1$   
 $n = \pm 1$

28)  $a^2 = 77$   
 $a = \pm\sqrt{77}$

$$\sqrt{48x^2y^3}$$

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

$$4xy\sqrt{3y}$$

$$\sqrt{a^{10}b^{12}c^{18}}$$
$$a^5b^6c^9\sqrt{c}$$

Algebra 2

Name \_\_\_\_\_ ID: 1

## Supplement quiz review

Simplify.

$$1) -\sqrt{8} + 2\sqrt{3} - \sqrt{12}$$

$$-2\sqrt{2}$$

$$2) -\sqrt{3} + 2\sqrt{12} + 2\sqrt{8}$$

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

$$3) 2\sqrt{8} + 2\sqrt{24} - 3\sqrt{2}$$

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

$$4) -\sqrt{45} - \sqrt{18} + 3\sqrt{2}$$

$$-3\sqrt{5}$$

$$5) 2\sqrt{3} + 3\sqrt{27} + 2\sqrt{12}$$

$$15\sqrt{3}$$

$$6) 2\sqrt{27} - 2\sqrt{3} - 3\sqrt{45}$$

$$4\sqrt{3} - 9\sqrt{5}$$

$$7) \frac{\sqrt{6}}{\sqrt{50}} \cdot \frac{\sqrt{3}}{5} \cdot \frac{\sqrt{50}}{\sqrt{50}}$$

$$\frac{\sqrt{300}}{50} \cdot \frac{\sqrt{100} \cdot \sqrt{3}}{50}$$

$$= \frac{10\sqrt{3}}{50} = \frac{\sqrt{3}}{5}$$

$$8) \frac{\sqrt{3}}{\sqrt{12}}$$

$$\frac{1}{2}$$

9)  $\frac{\sqrt{15}}{\sqrt{20}} \frac{\sqrt{3}}{2}$

10)  $\frac{4\sqrt{6}}{2\sqrt{3}}$   
 $2\sqrt{2}$

11)  $\frac{\sqrt{2}}{\sqrt{32}} \frac{1}{4}$

12)  $\frac{\sqrt{10}}{2\sqrt{5}}$   
 $\frac{\sqrt{2}}{2}$

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

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

15)  $\sqrt{5}(\sqrt{2} + \sqrt{6})$   
 $\sqrt{10} + \sqrt{30}$

16)  $\sqrt{6}(-5\sqrt{3} + \sqrt{10})$   
 $-15\sqrt{2} + 2\sqrt{15}$

17)  $(\sqrt{3} - 2)(-5\sqrt{3} + 3)$   
 $-21 + 13\sqrt{3}$

18)  $(2\sqrt{6} - 2)(\sqrt{2} + 2)$

~~$2\sqrt{12} + 4\sqrt{6} - 2\sqrt{2} - 4$~~   
 $4\sqrt{3} + 4\sqrt{6} - 2\sqrt{2} - 4$

19)  $(5 + \sqrt{3})(-3 - 4\sqrt{3})$   
 $-27 - 23\sqrt{3}$

20)  $(4\sqrt{3} + \sqrt{2})(\sqrt{3} + \sqrt{7})$

~~$12 + 8\sqrt{3} + \sqrt{6} + 2\sqrt{2}$~~   
 $4 \cdot 3 + 4\sqrt{21} + \sqrt{6} + \sqrt{14}$   
 $12 + 4\sqrt{21} + \sqrt{6} + \sqrt{14}$

21)  $(-2\sqrt{2} - 3)(5\sqrt{3} - 5)$   
 $-5 - 5\sqrt{2}$

22)  $(\sqrt{3} - 3)(-5\sqrt{3} + 1)$   
 $-18 + 16\sqrt{3}$

$-5 \cdot 3 + \sqrt{3} + 15\sqrt{3} - 3$   
 $-15$   
 $-18 + 16\sqrt{3}$   
 $\sqrt{15} - 5\sqrt{18} + 5 - 5\sqrt{30}$   
 $-15\sqrt{2}$

$-25 - 5\sqrt{6} + 5\sqrt{3} + \sqrt{18}$   
 $3\sqrt{2}$

23)  $(-5 + \sqrt{3})(5 + \sqrt{6})$

~~$-25 - 5\sqrt{3} + 5\sqrt{6} + \sqrt{18}$~~

24)  $(\sqrt{3} + \sqrt{5})(\sqrt{5} - 5\sqrt{6})$

~~$-4\sqrt{15} - 6$~~

Solve each equation by taking square roots.

25)  $n^2 = 3$   
 $\{\sqrt{3}, -\sqrt{3}\}$

26)  $r^2 = 64$   
 $\{8, -8\}$

27)  $n^2 = 1$   
 $\{1, -1\}$

28)  $a^2 = 77$   
 $\{\sqrt{77}, -\sqrt{77}\}$