Practice Key

Tuesday, February 03, 2015 7:19 AM

Honors Geometry

Extra Practice 9.1

Name _____

Simplify completely.

1. $2\sqrt{3528}$

$2\sqrt{36 \cdot 98}$

$= 2\sqrt{36 \cdot 49 \cdot 2}$

$= 84\sqrt{2}$

2. $3\sqrt{1008}$

$= 3\sqrt{16 \cdot 9 \cdot 7}$

$= 36\sqrt{7}$

3. $\frac{2\sqrt{2}}{\sqrt{8}} \cdot \frac{\sqrt{8}}{\sqrt{8}}$

$= \frac{2 \cdot 4}{8}$

$= 1$

4. $\frac{9}{\sqrt{27}}$

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

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

5. $\frac{4\sqrt{20}}{\sqrt{10}}$

$= 4\sqrt{2}$

6. $\frac{\sqrt{24}}{\sqrt{6}}$

$= 2$

7. $\sqrt{30} + 2\sqrt{108} + 2\sqrt{1600} - 7\sqrt{75}$

$= \sqrt{30} + 12\sqrt{3} + 2 \cdot 40 - 35\sqrt{3}$

$= \sqrt{30} - 23\sqrt{3} + 80$

8. $\sqrt{18} - 3\sqrt{320} + 2\sqrt{32}$

$= 3\sqrt{2} - 24\sqrt{5} + 8\sqrt{2}$

$= 11\sqrt{2} - 24\sqrt{5}$

9. $(6\sqrt{5})^2$

$= 36 \cdot 5$

$= 180$

10. $(3\sqrt{2})^3$

$= 27 \cdot 4 \cdot \sqrt{2}$

$= 108\sqrt{2}$

11. $(3 - 4\sqrt{6})(2 + 5\sqrt{6})$

$= 6 + 15\sqrt{6} - 8\sqrt{6} - 20 \cdot 4$

$= -114 + 7\sqrt{6}$

Solve for x.

12. $x^2 - 45 = 0$

$x^2 = 45$

$x = \pm 3\sqrt{5}$

13. $x^2 + 5x - 24 = 0$

$= (x+8)(x-3) = 0$

$x = -8, 3$

14. $3(x-5)^2 + 4 = 112$

$3(x-5)^2 = 108$

$(x-5)^2 = 36$

$x - 5 = 6$ OR $x - 5 = -6$

$x = 11, -1$

15. $2(x+6)^2 - 5 = 93$

$2(x+6)^2 = 98$

$(x+6)^2 = 49$

$x + 6 = 7$ OR $x + 6 = -7$

$x = 1, -13$

16. $3x^2 - 36x + 108 = 0$

$x^2 - 12x + 36 = 0$

$(x-6)^2 = 0$

$x = 6$

17. $4x^2 + 14x - 8 = 0$

$2x^2 + 7x - 4 = 0$

$(2x-1)(x+4) = 0$

$x = \frac{1}{2}, -4$

18. $x^2 + 14x - 8 = 0$

$x = \frac{-14 \pm \sqrt{228}}{2}$

$= \frac{-14 \pm 2\sqrt{57}}{2}$

$= -7 \pm \sqrt{57}$

19. $3x^2 + 10x - 7 = 0$

$x = \frac{-10 \pm \sqrt{184}}{6}$

$= \frac{-10 \pm 2\sqrt{46}}{6}$

$= \frac{-5 \pm \sqrt{46}}{3}$