

Standards 4A and 4B Review

**1-15. Simplify**

1.  $3\sqrt{32}$

2.  $\sqrt{48x^5}$

3.  $\sqrt[3]{-108}$

4.  $-5\sqrt[3]{128x^6}$

5.  $\frac{2}{\sqrt{6}}$

6.  $\sqrt{\frac{4}{52}}$

7.  $\frac{6+\sqrt{8}}{2}$

8.  $\frac{3+\sqrt{12}}{3}$

9.  $5\sqrt{50}+\sqrt{8}$

10.  $3\sqrt{7}-7\sqrt{2}-7\sqrt{7}$

11.  $3(\sqrt{3}-4)$

12.  $\sqrt{5}(\sqrt{80}-\sqrt{3})$

13.  $\sqrt{\frac{64}{15x^2}}$

14.  $\sqrt{72a^5bc^4}$

15.  $\sqrt[4]{\frac{x^5}{y^8z^4}}$

**16-18. Evaluate  $\sqrt{a^2+bc^2}$  for the given value and write in simplest form.**

16.  $a=2$   
 $b=4$   
 $c=-3$

17.  $a=-1$   
 $b=5$   
 $c=2$

18.  $a=7$   
 $b=3$   
 $c=-5$

**19-30. Solve the Quadratic Equations. Write your answers in exact form (no decimals).**

19.  $5x^2 - 125 = 0$

20.  $x^2 + 14x = 15$

21.  $x^2 + 2x = 5$

22.  $(2x - 3)(x + 6) = 0$

23.  $4x^2 - 371 = 29$

24.  $3x^2 - 120x = 0$

25.  $(2x - 3)^2 = 9$

26.  $x^2 - 4x = -1$

27.  $x^2 - 8x + 15 = 0$

28.  $3x^2 - 18x + 12 = 0$

29.  $-21 = 15 - 2x^2$

30.  $x^2 + 6x = -9$

**31-33. Find the discriminant and the number of x-intercepts for the following equations.**

31.  $y = 4x^2 + 4x + 1$

32.  $f(x) = 3x^2 + 8x + 8$

33.  $y = -x^2 + 5x + 13$