

## Summer Review for AP Precalculus

**Write the slope-intercept form of the equation of the line described.**

1) through:  $(4, -4)$ , parallel to  $x = 0$

**Write the slope-intercept form of the equation of the line through the given points.**

2) through:  $(5, -1)$  and  $(0, -4)$

**Write the slope-intercept form of the equation of each line.**

3)  $x - y = 4$

**Write the slope-intercept form of the equation of the line described.**

4) through:  $(0, -2)$ , perp. to  $y = -\frac{2}{3}x - 3$

**Write the slope-intercept form of the equation of each line given the slope and y-intercept.**

5) Slope = 1, y-intercept =  $-2$

6) Slope =  $-\frac{3}{4}$ , y-intercept =  $-1$

**Simplify. Your answer should contain only positive exponents.**

7)  $\frac{u^4 v^3}{u^{-3}}$

8)  $\frac{3xy^{-1}}{2xy^4}$

9)  $3x^{-2} \cdot x^4 y^2$

**Simplify.**

10)  $(2x^0 y^4)^2$

**Simplify. Your answer should contain only positive exponents.**

11)  $(a^4 b^2)^2$

12)  $(3ba^4)^{-1}$

13)  $\frac{2n^{-2}}{m^4 n^2 \cdot (2m^{-3})^{-2} \cdot m^{-4} n^3}$

14)  $\left(\frac{u^3 v^2}{u^{-1} \cdot 2vu^3}\right)^3$

**Factor each.**

15)  $f(x) = 2x^3 - x^2 - 3x$

16)  $f(x) = 2x^3 - 13x^2 + 20x$

17)  $f(x) = 3x^3 + x^2 + 6x$

18)  $f(x) = x^3 + 6x^2 - 10x$

19)  $f(x) = 2x^4 + 11x^2 - 6$

20)  $f(x) = 2x^4 + 11x^2 + 14$

21)  $f(x) = 2x^4 - 4x^3 + 5x^2 - 10x$

22)  $f(x) = 3x^4 - 2x^3 - 12x^2 + 8x$

23)  $f(x) = -27x^4 + 64x$

24)  $f(x) = x^4 + 27x$

**Solve each equation.**

25)  $|-10 + r| = 12$

26)  $-2\left|\frac{x}{5}\right| - 1 = -5$

**Solve each equation by taking square roots.**

27)  $7x^2 + 7 = -138$

28)  $-3 - 4x^2 = -74$

**Solve each equation by factoring.**

29)  $5m^2 + 26m = 24$

30)  $2x^2 + 5x = 25$

**Solve each equation. Remember to check for extraneous solutions.**

31)  $4 + \sqrt{9n} = 7$

32)  $7 = \sqrt{36x} + 1$

33)  $\sqrt{2x} = \sqrt{3x - 1}$

34)  $\sqrt{3v - 16} = \sqrt{2v - 8}$

35)  $\frac{1}{5v} - 1 = \frac{1}{5}$

36)  $\frac{1}{3p} - 2 = \frac{4}{3p}$

37)  $1 - \frac{1}{a - 6} = \frac{4}{a - 6}$

38)  $\frac{1}{n - 4} + 3 = \frac{3}{n - 4}$

**Solve each equation.**

39)  $5^{k-2} = 25$

40)  $4^{3b+2} = 16$