AP Precalculus Name_____



# Summer Assignment

Date_____ Period____

**SHOW ALL WORK ON SEPARATE SHEET OF PAPER!**

**Simplify each expression.**

1) $(a - a^2 + 4a^4) - (8a^4 + 7a^3 - a)$

2) $(4x^4 + x + 6x^3) + (3x + 5x^4 + 6x^3)$

3) $(7v - v^3 + 2) - (4v + 4v^3 - 5)$

4) $(8x^2 + x^4 - 2x^3) - (2x^2 + 8x^3 + 7x^4)$

**Find each product.**

5) $(r - 4)(r + 7)$

6) $(8k - 4)(2k - 4)$

7) $(4x - 5)(8x^2 - 7x + 2)$

8) $(6x - 5)(5x^2 - 3x - 5)$

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

9) Slope = $-\frac{3}{4}$, y-intercept = –4

10) Slope = 0, y-intercept = 4

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

11) $0 = -5y - 2x - 15$

12) $-x = 3y + 9$

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

13) through: $(4, 3)$, slope = $-\frac{1}{2}$

14) through: $(-1, -1)$, slope = 4

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

15) through: $(4, 5)$ and $(1, -5)$

16) through: $(0, -2)$ and $(3, -5)$

17) through: $(2, 0)$ and $(0, 0)$

18) through: $(0, 3)$ and $(-2, 2)$

**Solve each system.**

19) $-9 = -y + x$
$y + 5x - 3 = 0$

20) $14 - 2y = -x$
$0 = -7x + 2y + 10$

21) $-5x = y + 1$
$3x = 9 + y$

22) $72 = -9y - x$
$0 = 18 - 8x - 6y$

23) $81 + 5x + 9y = 0$
$-5x - 9 = -9y$

24) $-48 + 8y - 3x = 0$
$16 = -5x - 8y$

**Factor each completely.**

25) $6m^2 - 12m - 210$

26) $r^2 - 3r + 2$

27) $x^2 + 6x + 8$

28) $x^3 - 12x^2 + 35x$

29) $5p^3 + 10p^2 + 4p + 8$

30) $7a^3 - 49a^2 + 2a - 14$

**Solve each equation by factoring.**

31) $12 - 8r = -r^2$

32) $0 = -n^2 + 5n$

33) $8 - 6x = -x^2$

34) $m^2 + 14m = -48$

35) $49x = -6 - 49x^2$

36) $24 = -67n - 8n^2$

37) $12 = -5m^2 + 16m$

38) $13v = 10 - 3v^2$

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

39) $y^4 \cdot x^2y^4$

40) $3yx^{-2} \cdot x^2$

41) $x^{-2} \cdot 4x^{-1}y^{-4}$

42) $\left(nm^4\right)^2$

43) $\left(4x\right)^{-2}$

44) $\left(x^4y^4\right)^{-4}$

45) $\dfrac{4u^2v^3 \cdot 2u^{-1}v^4 \cdot v^{-4}}{2uv^{-1}}$

46) $\dfrac{2x^4 \cdot 4x^2y^{-3}}{yx^{-1}}$

47) $\dfrac{4x^{-4}}{3x \cdot 3x^4}$

48) $\dfrac{2x^4y^2 \cdot 2y^{-4}}{\left(2xy^3\right)^{-3}}$

49) $\left(\dfrac{2a^4}{a^{-3}b^3 \cdot b}\right)^{-4}$

50) $\dfrac{y^{-3} \cdot 2yx^4 \cdot 2xy^3}{\left(2x^2y^{-1}\right)^4}$

**Write each expression in radical form.**

51) $\left(2x\right)^{\frac{5}{6}}$

52) $a^{\frac{5}{3}}$

53) $\left(5a\right)^{\frac{7}{4}}$

54) $\left(7x\right)^{\frac{2}{3}}$

**Simplify.**

55) $\sqrt{112n^4}$

56) $\sqrt{36p}$

57) $\sqrt[7]{1024x^2}$

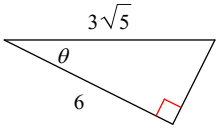
58) $\sqrt{200b^3}$

59) $\sqrt[3]{-448r^5}$

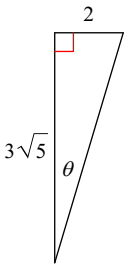
60) $\sqrt{294x^4}$

**Find the value of the trig function indicated.**

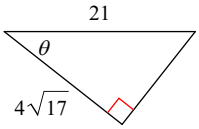
61) tan $\theta$



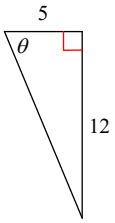

62) tan $\theta$




63) tan $\theta$

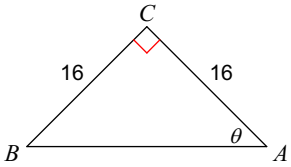



64) tan $\theta$




**Find the measure of each angle indicated. Round to the nearest tenth.**

65)

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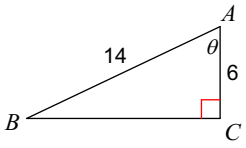


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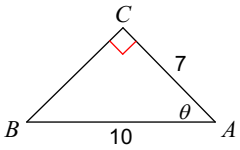


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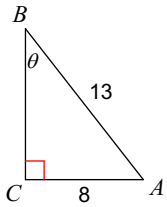
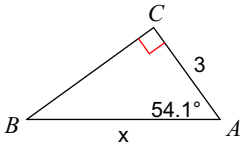



**Find the measure of each side indicated. Round to the nearest tenth.**

69)

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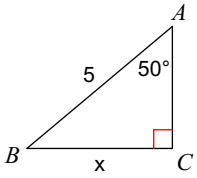


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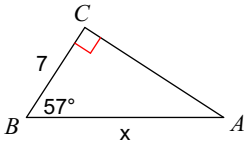


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