Precal(PAP) Summer Assignment **Name**_____

Grade_____

YOU MUST SHOW ALL WORK ON EACH PROBLEM!
EACH ANSWER SHOULD BE FULLY SIMPLIFIED

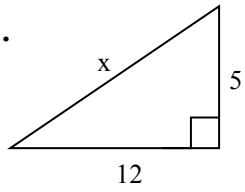
****All concepts on this worksheet are prerequisite knowledge either from Geometry or Algebra II. You are expected to know them without review the first day of class.**

****You should bring this completed worksheet with you the first day of class. If you should need another copy, you can find it on the Westlake High Website or on Mrs. Bixler's website. It will count as 5 non-droppable homework grades.**

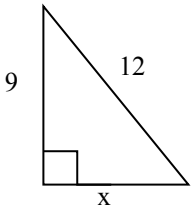
**** You will not get credit if you do not show work where asked. SHOW WORK!!**

I. Solve for missing side. SHOW WORK and leave answer as simplified radicals where necessary.

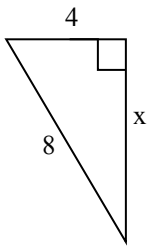
1.



2.



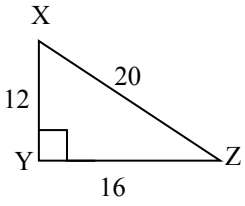
3.



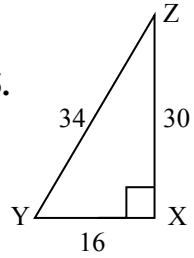
1_____ **2**_____ **3**_____

II. Find the value of each trigonometric ratio. Leave your answer as a simplified fraction:

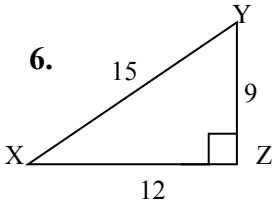
4.



5.



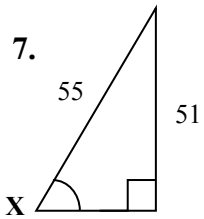
6.



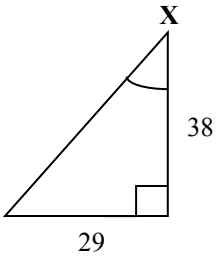
4. sin Z=_____ **5.** tan Y =_____ **6.** cos X=_____

II. Find the measure of the indicated non-right angle to the nearest tenth of a degree. SHOW WORK

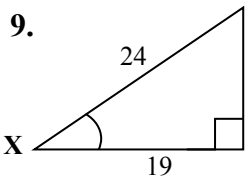
7.



8.



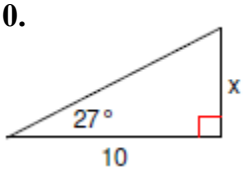
9.



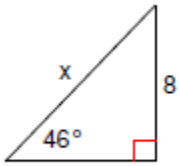
7_____ **8**_____ **9**_____

III. Find the missing side. Round to the nearest tenth. (SHOW WORK)

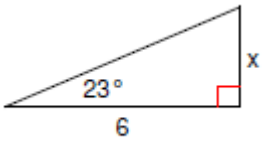
10.



11.



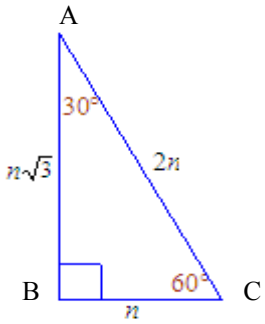
12.



10_____ **11**_____ **12**_____

IV. Given the following special right triangles and the relationships of their sides, find the length of the missing sides: (SHOW WORK, leave answers as simplified radicals if neceessary)

13. $BC = 12$



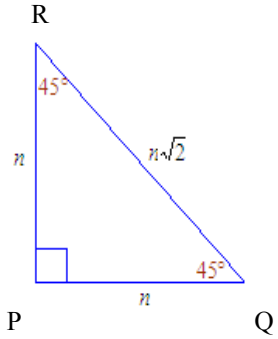
13. $AB =$ _____ $AC =$ _____

14. $AB = \frac{5}{2}$

15. $AC = 7$

14. $BC =$ _____ $AC =$ _____ **15.** $AB =$ _____
$BC =$ _____

16. $PR = \frac{2}{3}$



16. $PQ =$ _____ $RQ =$ _____

17. $RQ = 1$

18. $RQ = \sqrt{5}$

17. $PQ =$ _____ $RP =$ _____ **18.** $PQ =$ _____ $RP =$ _____

V. Simplify the following radical expression completely. Do not use a calculator, write answers as simplified radicals where necessary.

19. $\sqrt{25}$ **20.** $3\sqrt{12}$ **21.** $3\sqrt{5}+2\sqrt{50}$

19_____ **20**_____ **21**_____

22. $\sqrt{72}-\sqrt{75}$ **23.** $3\sqrt{5}\left(2\sqrt{15}\right)$ **24.** $\sqrt{3}\left(4-\sqrt{12}\right)$

22_____ **23**_____ **24**_____

25. $\dfrac{3}{\sqrt{5}}$ **26.** $\dfrac{4\sqrt{6}}{3\sqrt{2}}$ **27.** $\dfrac{\sqrt{3}}{2+\sqrt{6}}$

25_____ **26**_____ **27**_____

VI. Describe the transformation of each function below. Give the type of function (linear, quadratic, etc), its transformation (reflections,shifts,etc) and domain and range.

28. $f(x)=x^2+4$
Type:_____
Transf _____
_____
Domain:_____
Range:_____

29. $f(x)=-(x+2)^2$
Type: _____
Transf:_____
_____
Domain:_____
Range: _____

30. $f(x)=(x-3)^2-7$
Type: _____
Transf:_____
_____
Domain:_____
Range:_____

31. $f(x)=-\sqrt{(x+9)}$
Type:_____
Transf _____
_____
Domain:_____
Range:_____

32. $f(x)=\sqrt{x}+3$
Type: _____
Transf:_____
_____
Domain:_____
Range: _____

33. $\sqrt{(x-1)}-10$
Type: _____
Transf:_____
_____
Domain:_____
Range:_____

VI. Factor each polynomial completely. (SHOW EACH STEP IF MORE THAN ONE).

34. $n^2 - 5n + 6$ **35.** $2y^2 + 8y - 42$ **36.** $x^2 - 7xy + 10y^2$

34_____ **35**_____ **36**_____

37. $4h^3k^2 - 16h^3m^2$ **38.** $x^2 - 25y^2$ **39.** $9x^2 + 4y^2$

37_____ **38**_____ **39**_____

40. $8x^4 - 28x^3 + 6x - 21$ **41.** $x^3 + 81$ **42.** $15x^3 + 10x^2 + 3x + 2$

40_____ **41**_____ **42**_____

43. $8x^3 - 27$ **44.** $mn^3 - 2m^2n^2 - mn$ **45.** $6x^2 + 7xy - 49y^2$

43_____ **44**_____ **45**_____

46. $7 - 23x + 6x^2$ **47.** $32a^3b^3 - 12a^2b^4 + 24a^2b^3 - 16a^2b^3$

46_____ **47**_____

VII. Simplify the following completely. (SHOW WORK):

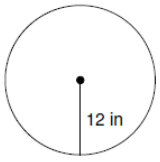
48. $\dfrac{2}{x+1} + \dfrac{3}{x-2}$ **49.** $\dfrac{x+3}{x-3} - \dfrac{x-3}{x+3}$ **50.** $\dfrac{3x+13}{x^2-3x-10} - \dfrac{16}{x^2-6x+5}$

48_____ **49**_____ **50**_____

51. $\frac{2}{x-2} \cdot \frac{x^2-4}{4}$ **52.** $\frac{x^2-81}{x^2-18x+81} \div \frac{1}{x^2-9x}$ **53.** $\frac{1-\frac{1}{x^2}}{1+\frac{1}{x}}$

51_____ **52**_____ **53**_____

54. Find the area and circumference and leave answers in terms of π. (**SHOW WORK)**



54. A=_____**C=**_____

55. Find the diameter of the circle with an area of 201.1 in^2. Round to the nearest hundredth. (**SHOW WORK)**

55_____

56. Find the circumference of the circle with an area of 254.5in^2. Round to the nearest hundredth. (**SHOW WORK)**

56_____

57. Find the area of the circle with circumference 62.8 mi. Round to the nearest hundredth. (**SHOW WORK)**

56_____