LWHS AP Precalculus Name _____ Period_____ Date_____

AP Precalculus Skills Check **Score: ___/ 30**

Convert each measure as indicated.

1. 1,300 cups = _____ gal, given 1 qt = 2 pt, 1 gal = 4 qt, and 2 cups = 1 pt.

2. 20 $\frac{in^2}{s}$ = _____ $\frac{yd^2}{min}$, given 1 min = 60 s, 1 yd = 3 ft, 1 ft = 12 in.

3. 20° = ____ *Radians,* given 180° = π *Radians*

4. 299,792,000 m / s = _____ mi / h given 1 m = 1.09361 yd, 1 h = 3,600 s, and 1 mi = 1,760 yd.

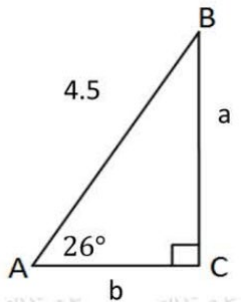
Use the Pythagorean Theorem to find the missing side length(s). Leave answers in simplest radical form.

5. $a = 11, b = 8, c =?$

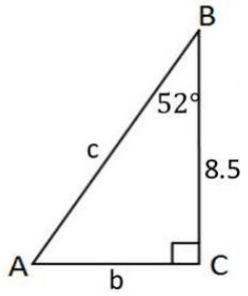
6. $a = \frac{2}{3}b, c = 12$

Solve each right triangle. Round decimals to the nearest thousandth, if necessary.

7.



8.



Perform the indicated operation, then reduce to simplest form.

9. $\frac{3}{5} + \frac{4}{9} =$

10. $\frac{5}{6} - \frac{2}{13} =$

11. $[(3 * 2 + 5)2]2 - 4 =$

12. $x^3(x-1)^2(2+x)(2-x) =$

13. $\frac{(\frac{3}{4}+\frac{7}{9})}{2} =$

14. $\frac{x-\frac{5x}{x+5}}{x+\frac{5x}{x-5}} =$

Solve for the indicated variable.

15. $(2x + y)(2x - y) = 4x(x - 1);\ \ x$

16. $R = \frac{a}{1-a};\ \ a$

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Factor completely.

17. $7y^2 - 23xy + 6x^2$

18. $9x^3 - 63x^2 + 108x$

Solve each equation. Give answers exactly and rounded to the nearest thousandth.

19. $7n + 2[3(1 - n) - 2(1 + n)] = 14$

20. $3x^2 - 41x = -60$

21. $4x^4 + 21x^2 - 18 = 0$

22. $\frac{1}{y} - \frac{2}{1-y} = \frac{8}{y^2-y}$

23. $9^{4+x} * 81^x = \frac{1}{3}$

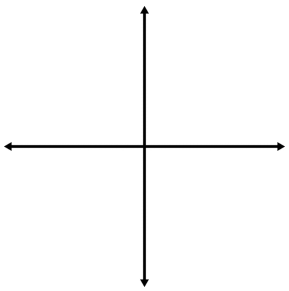
24. $\log_2(2 + 5x) = 3$

25. $\sqrt{9 - 7x} + 6 = 10$

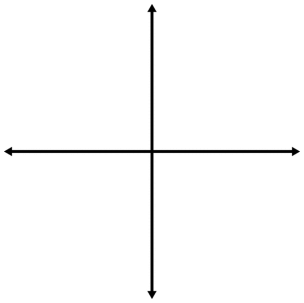
26. $20{,}000 = 10{,}000e^{0.05t}$

Graph each of the following.

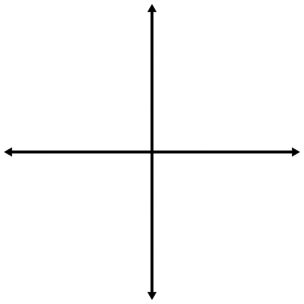
27. $\frac{x}{4} + y = 0$



28. $y = x^2 - 3x$



29. $f(x) = \begin{cases} 1; & x \le -2 \\ -x; & -2 < x \le 3 \\ 4; & x > 3 \end{cases}$



30. $\begin{cases} 3x + 4y = 10 \\ x - y = 1 \end{cases}$

