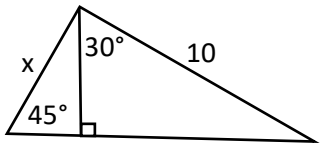
Term 3 Final Review **Secondary 3 Honors**

Do this assignment on your own paper.

Non-Calculator

1. Solve for x in the figure shown.



2. Simplify $\cos x \csc x \tan x$
3. Graph $y = -1 - 4\cos\frac{\pi}{4}(x + 3)$
4. Write the equation of a cotangent function with a period of $\frac{\pi}{6}$, vertical shift down 2, and a phase shift left $\frac{\pi}{12}$.
5. Name all trig functions that would have an asymptote on the y-axis.
6. If θ terminates in Quadrant III, and $\cos\theta = -\frac{5}{13}$, find the value of the other 5 trig functions.
7. Graph $y = 1 + \cot\frac{9}{2}\left(x - \frac{\pi}{9}\right)$
8. Solve $\cos\theta = \frac{\sqrt{3}}{2}$ if $0° \le \theta \le 270°$
9. Graph $\frac{15\pi}{2}$ in standard position.
10. Is $\tan\frac{3\pi}{4}$ positive, negative, or zero?
11. True/False
    a. $\tan^2 x = \sec^2 x - 1$ b. $\sin x + \cos x = 1$ c. $\sin^2 x = 1 - \cos^2 x$
    d. $\csc^2 x - 1 = \cot^2 x$ e. $\tan x \cos x = \sin x$
12. State the amplitude and period of $y = \frac{4}{5}\cos 3x$
13. Graph $y = 2\sin\frac{4}{3}x + 3$
14. Graph $y = \tan 3x$
15. Graph $y = \sec 2x + 4$
16. Graph $y = \csc\frac{1}{2}x - 2$

Calculator

17. Convert 330° to radians.
18. Convert $-\frac{8\pi}{5}$ to degrees.
19. Solve triangle ABC if B = 90°, A = 37°, and b = 21.
20. From a point on the ground 20 feet from the base of a tree, the angle of elevation to the top of the tree measures 65°. Find the height of the tree.
21. Find the area of triangle ABC with C = 64°, a = 18, and b = 22.
22. Solve triangle DEF with F = 34°, E = 72°, and f = 16.
23. Solve triangle DEF with F = 63.2°, f = 16.2, and d = 22.9.
24. Solve triangle ABC with a = 19, b = 14, and c = 11.
25. Verify $\frac{1+\sin A}{\sin A} = \csc A + 1$
26. Verify $\cos^2 x(1 + \tan^2 x) = 1$
27. Verify $\sin x(\csc x - \sec x) = 1 - \tan x$
28. Solve $5^{x-2} + 3 = 6$
29. Solve $\ln(2x + 3) = 7$

30. Simplify $\ln e^{3x+1}$
31. How many years would it take for an investment to triple if invested at 5% interest compounded continuously?
32. Solve $x^4 + 3x^3 + x^2 + x + 3 = 0$
33. If (-2, 7) is a point of f(x), what point would be on the following?
    a. $y = f(x - 4) + 6$
    b. $y = f^{-1}(x)$
    c. $y = 2f(x) + 3$
34. Find any intercepts and holes for $f(x) = \frac{(x-2)(3x+5)}{x^2-4}$
35. Simplify $\frac{x^3-x^2-6x}{x^2-3}$
36. Find $\lim_{x\to-3} \frac{x+3}{x^2+2x-3}$