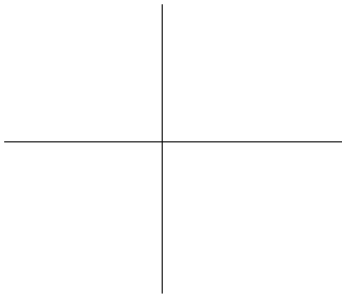
Classwork: Trigonometry

[1 – 4] Determine the quadrant in which the terminal side of the angle lies. Thee angles involve 1 or more complete rotations.

[1] $700°$ **[2]** $-700°$ **[3]** $\frac{25\pi}{4}$ **[4]** $-\frac{25\pi}{4}$

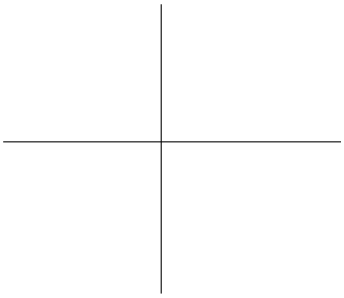
[5 – 6] Given the value of one trig ratio, draw a triangle in the correct quadrant and find the other value.

[5] $\sec\alpha = -\frac{25}{7},\ 0 < \alpha < \pi$



Find $\sin\alpha$.

[6] $\sin\beta = -\frac{15}{17},\ \frac{\pi}{2} < \beta < \frac{3\pi}{2}$



Find $\tan\beta$.

[7] Convert to degrees. Show your work.

[a] $\frac{\pi}{18}$ [b] $\frac{9\pi}{4}$

[8] Convert to radians. Show your work.

[a] $75°$ [b] $240°$

[9 – 12] Identify the quadrant (or quadrants) in which the terminal side of the angle lies.

[9] $\sin\alpha < 0,\ \tan\alpha < 0$ **[10]** $\cos\beta < 0,\ \csc\beta < 0$

[11] $\tan\gamma > 0,\ \sec\gamma > 0$ **[12]** $\sec\theta < 0,\ \cos\theta < 0$

[13- 16] Evaluate each expression, or write *dne*. Answers that are not *dne* or zero must include a sign (+ or -).

[13] $\sin 90°$ **[14]** $\tan\pi$

[15] $\sec\frac{3\pi}{2}$ **[16]** $\csc 360°$

[17- 20] Evaluate each expression, or write *dne*. Answers that are not *dne* or zero must include a sign (+ or -).

[17] $\sin 120°$ **[18]** $\cos\frac{7\pi}{6}$

[19] $\tan\left(-\frac{\pi}{3}\right)$ **[20]** $\sec 150°$

[21] Use the appropriate angle sum or difference identity to evaluate the following:

[a] Evaluate $\cos\left(\frac{2\pi}{3}+\frac{\pi}{4}\right)$ **[b]** Evaluate $\sin\left(\frac{7\pi}{6}-\frac{\pi}{4}\right)$

[22] Use the appropriate half angle formula to evaluate $\cos\frac{5\pi}{8}$

[23 -27] Choose all the equivalent expressions. You will need to know your identities!

[23] $\sec^2 10° =$

[a] $1+\tan^2 10°$ [b] $1-\tan^2 10°$ [c] $\frac{1}{\cos^2 10°}$ [d] $\frac{1}{\sin^2 10°}$ [e] $\frac{1}{\sin^2 10°\cot^2 10°}$

[24] $\cos^2 50° =$

[a] $1-\sin^2 50°$ [b] $1+\sin^2 50°$ [c] $\frac{1}{2}+\frac{1}{2}\cos 100°$ [d] $\frac{1}{2}-\frac{1}{2}\cos 100°$ [e] $\frac{1}{2}+\frac{1}{2}\cos 25°$

[25] $\sqrt{\frac{1}{2}-\frac{1}{2}\cos 20°} =$ [a] $\sin 10°$ [b] $\sin 40°$ [c] $\cos 10°$ [d] $\cos 40°$

[26] $2\sin\frac{\pi}{10}\cos\frac{\pi}{10} =$ [a] $\sin\frac{\pi}{20}$ [b] $\sin\frac{\pi}{5}$ [c] $\cos\frac{\pi}{20}$ [d] $\cos\frac{\pi}{5}$

[27] $\cos^2\frac{\pi}{15}-\sin^2\frac{\pi}{15} =$ [a] $\sin\frac{\pi}{30}$ [b] $\sin\frac{2\pi}{15}$ [c] $\cos\frac{\pi}{30}$ [d] $\cos\frac{2\pi}{15}$

[28 -30] Evaluate each expression without a calculator.

[28] $\sin 12°\cos 18° + \sin 18°\cos 12° =$

[29] $\cos 50°\cos 5° + \sin 50°\sin 5° =$

[30] $\sin 70°\cos 10° - \sin 70°\cos 10° =$