[trigonometry]

1. Draw each angle in standard position
   a. $135°$
   b. $-250°$
   c. $\dfrac{7\pi}{6}$

2. State the quadrant in which each angle's terminal arm falls
   a. $385°$
   b. $\dfrac{19}{3}$

3. The point $(-16, -12)$ is on the terminal arm of angle θ. Determine $\cos\theta$ and illustrate.

4. Find $\sin\theta$ if θ is a positive angle and $\tan\theta = -\dfrac{4}{3}$.

5. Calculate to 4 decimal places
   a. $\tan 56$
   b. $\csc 245$
   c. $\cos(-364)$

6. Illustrate and determine exact values of
   a. $\tan 60$
   b. $\sec(-210)$
   c. $\sin 135$
   d. $\cos 930$

7. Determine θ to the nearest degree
   a. $\sin\theta = 0.9215$
   b. $\cot\theta = 1.9892$

8. Express in degrees
   a. $-\dfrac{16}{3}$
   b. 3.5

9. Express in radians
   a. $140°$
   b. $-310°$

10. Sketch and label appropriately
    a. $y = \cos\theta, \; -2\pi \le \theta \le \dfrac{3\pi}{2}$
    b. $y = \cot\theta, \; \pi \le \theta \le 3\pi$

11. For each function state the required information
    a. $y = \sin\theta$
        i. Domain
        ii. Range
        iii. θ-intercepts
        iv. maximum of y
        v. period
    b. $y = \tan\theta$
        i. period
        ii. domain
        iii. θ-intercepts
    c. $y = 6\cos\theta$
        i. amplitude
        ii. period
        iii. domain
    d. $y = \csc(3\theta)$
        i. amplitude
        ii. period
        iii. phase shift
    e. $y = \sec\left(\theta - \dfrac{\pi}{2}\right)$
        i. amplitude
        ii. period
        iii. phase shift
    f. $y = -4\sin\dfrac{2}{3}(\theta - \pi) + 6$
        i. amplitude
        ii. period
        iii. phase shift
        iv. maximum of y

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g. $y = -2\sin(3\theta + \pi) - 4$
   i. maximum of y
   ii. minimum of y
   iii. phase shift
   iv. range

12. On the same axes, sketch and label
    a. $y = \cos\theta$ and $y = \cos 3\theta$ and $y = \cos\frac{1}{3}\theta$
    b. $y = \cos\theta$ and $y = 2\cos\theta$ and $y = \cos\frac{1}{2}\theta$

13. Sketch the transformations. Then check one point on the final graph.
    a. $y = 3\cos\left(\theta + \frac{\pi}{2}\right) - 4$
    b. $y = 2\sin(3\theta - \pi) + 2$

14. State two angles coterminal with
    a. $-103°$
    b. $41°$

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