4.1–4.3 PC Review

① Describe what a radian is.

Convert radians to degrees

② $\frac{5\pi}{9}$

$A = (100^\circ)$

③ 3 radians

$\left(A = \frac{540}{\pi} \approx 171.89^\circ\right)$

Convert degrees to radians

④ 140°

$\left(A = \frac{7}{9}\pi\right)$

⑤ 290°

$\left(A = \frac{29}{18}\pi\right)$

⑥ Convert 79.37° to Degrees/Minutes/Seconds.

$(79^\circ\ 22'\ 12'')$

⑦ Convert $42^\circ\ 48'\ 9''$ to Degrees

(42.8025°)

⑧ Find arc length if circle has radius of 8 with a central angle of 45°.

$(s = 2\pi \approx 6.28)$

⑨ Find the arc length if circle has a diameter of 7 and a central angle of 6 radians.

$(s = 21)$

⑩ Find radius of circle if $\theta = 270^\circ$ and $s = 18$.

$\left(r = \frac{12}{\pi} \approx 3.82\right)$

(13) If $\tan\theta = \frac{5}{12}$ and [redacted], find $\sin\theta$.

$\csc\theta < 0$

$\left(-\frac{5}{13}\right)$

In #3-11, evaluate without the trig functions of your calculator.

3. $\sin 420$

4. $\cos \frac{17\pi}{4}$

5. $\cos -120$

6. $\sin \frac{23\pi}{6}$

7. $\cos 750°$

8. $\sin 318\pi$

9. $\sin -\frac{7\pi}{6}$

10. $\cos(\frac{3\pi}{2} + 29\pi)$

11. $\sin(23.8\pi) - \sin(7.8\pi)$

(5) -1 (6) 0 (7) 0

(4) $\frac{\sqrt{2}}{2}$ (3) $\frac{\sqrt{3}}{2}$ (2) 0

(1) $\frac{\sqrt{3}}{2}$ (0) -1 (-1) -1

(11) If $\sin\theta = \frac{5}{8}$, find $\tan\theta$ and $\sec\theta$.

$\left(\tan\theta = \frac{5}{\sqrt{39}}\right.$

$\left.\sec\theta = \frac{8}{\sqrt{39}}\right)$

(12) You are 75 meters from the base of a building. You estimate the angle of elevation to the top of the building to be 80°.

(a) How tall is the building?

$\left(= 75\tan 80°\right.$

$\left.\approx 425.35\text{ m}\right)$

(b) What is your distance to the top of the building?

$\left(= \frac{75}{\cos 80°}\right.$

$\left.\approx 431.91\text{ m}\right)$