Pre-Calculus **Calculator Trig Review Worksheet**

Key

radian mode

Find each value. Round off to 4 decimal places

1. $\sin 218^\circ 52' =$ -0.6275

2. $\cot 52^\circ 18' =$ 0.7729 $\quad \frac{1}{\tan(52^\circ 18')}$

3. $\csc(3^r) =$ 7.0862 $\quad \sin(3^r)$

Find each angle θ, in standard position, correct to the nearest minute where $0^\circ \le \theta \le 90^\circ$.

4. $\tan\theta = 2.2317$ $\quad \theta = \tan^{-1}(2.2317)$ $\quad \theta = 65^\circ 52'$

5. $\sec\theta = 3.0174$ $\quad \cos\theta = \frac{1}{3.0174}$ $\quad \theta = \cos^{-1}\left(\frac{1}{3.0174}\right)$ $\quad \theta = 70^\circ 39'$

Find each angle θ, in standard position, correct to the nearest minute where $0^\circ \le \theta \le 360^\circ$.

6. $\cos\theta = -0.1833$ $\quad$ II. $100^\circ 34'$ $\quad$ III: 259°

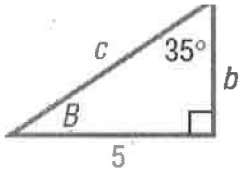
7. $\cot\theta = 0.5337$ $\quad \tan\theta = \frac{1}{0.5337}$ $\quad -1\left(\frac{1}{0.5337}\right)$

I: $61^\circ 55'$

III: $241^\circ 55'$

In problems 8 and 9, solve each triangle. Round angles to the nearest minute and sides to the nearest tenth.

8.

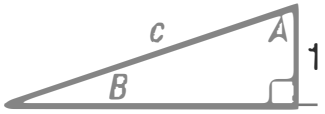


$\angle B = 90^\circ - 35^\circ = 55^\circ$

$\sin 35^\circ = \frac{5}{c}$ $\quad c = \frac{5}{\sin 35^\circ} \approx 8.7u$

$\tan 35^\circ = \frac{5}{b}$ $\quad b = \frac{5}{\tan 35^\circ} \approx 7.1u$

9.



$3^2 + 1^2 = c^2$

$10 = c^2$

$c \approx 3.2u$

$\tan A = \frac{3}{1}$

$A = \tan^{-1}(3) \approx 71^\circ 34'$

$B = 90^\circ - 71^\circ 34' = 18^\circ 26'$

10-11

In problems ~~11-12,~~ s denotes the length of the arc of a circle of radius r subtended by the central angle θ. Find the missing quantity. Round answers to three decimal places.

10 ~~11.~~ $r = 22$ *feet*, $\theta = \frac{1}{3}$ *radians*, $s = ?$

$S = \frac{\frac{1}{3}}{2\pi} \cdot 2\pi \cdot 22$

$S \approx 7.333$ ft

11 ~~12.~~ $r = 56$ *cm*, $\theta = 37^\circ$, $s = ?$

$S = \frac{37^\circ}{360^\circ} \cdot 2 \cdot \pi \cdot 56$

$S \approx 36.1632$ cm

12-13

In problems 13-14, A denotes the area of the sector of a circle of radius r formed by the central angle θ. Find the missing quantity. Round answers to three decimal places.

12 ~~13.~~ $r = 29$ *feet*, $\theta = 160^\circ$, $A = ?$

$A = \frac{160^\circ}{360^\circ} \cdot \pi \cdot 29^2$

$A \approx 1174.3\ ft^2$

13 ~~14.~~ $r = 8$ *feet*, $\theta = 4$ *radians*, $A = ?$

$A = \frac{4}{2\pi} \cdot \pi \cdot 8^2$

$A = 128\ ft^2$

14 ~~15.~~ Find the length of the arc subtended by a central angle of 135° on a circle of radius 4 meters. What is the area of the sector?

$S = \frac{135^\circ}{360^\circ} \cdot 2 \cdot \pi \cdot 4$ $S \approx 9.4$ m

$A = \frac{135^\circ}{360^\circ} \cdot \pi \cdot 4^2$ $A \approx 18.8\ m^2$

15 ~~16.~~ A neighborhood carnival has a merry-go-round whose radius is 25 feet. If the time for one revolution is 30 seconds, how fast is the merry-go-round going in mph?

$C = 50\pi$ ft.

$\frac{1\ rev.}{30\ sec} \cdot \frac{50\pi\ ft}{1\ rev} \cdot \frac{1\ mi}{5280\ ft} \cdot \frac{60\ sec}{1\ min} \cdot \frac{60\ min}{1\ hr.} = \frac{180000\pi\ mi}{158400\ hrs} \approx 3.6$ mph

17 The radius of each wheel of a car is 16 inches. At how many revolutions per minute should a spin balancer be set to balance the tires at a speed of 90 miles per hour? Is the setting different for a wheel of radius 14 inches? Is so, what is this setting?