

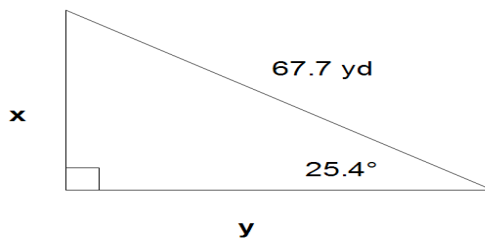
TRIGONOMETRY – PRACTICE EXAM 1 – Chapters 1 – 3

DIRECTIONS/REMARKS:

- Print your name at the top-right area of exam.
- This exam is closed-book, closed-notes, closed-'everything' except a calculator and 4x6 note-card.
- Do not write on exam – use front and back of scratch paper provided.
- “EXACTLY” means answer must be in terms of whole #'s, fractions, and/or radicals – not calculator answers!
- Except for trig. functions of special and quadrantal angles, sufficient work must be shown for any credit!
- Pay attention to significant figures in problems where non-angular quantities have actual units of measure.

PROBLEMS (each part worth 5 pts.):

1. Given: angle θ 's terminal side passes thru point $(-2\sqrt{5}, 3\sqrt{7})$, find EXACTLY: a) $\csc \theta$, b) $\tan \theta$
2. Given: $\cot \theta = -\frac{2\sqrt{3}}{5}$ and θ is in quadrant IV, find EXACTLY a) $\sin \theta$, b) $\sec \theta$
3. a) Solve for angle β : $\csc(7\beta - 47^\circ) = \sec(5\beta + 25^\circ)$
b) Write this function in terms of its co-function (leave angle in D-M-S form): $\tan(38^\circ 13' 49'')$
4. Find EXACTLY: a) $\csc(-56370^\circ)$, b) $\cot(422580^\circ)$
5. Given the triangle below, find a) x , and b) y :



6. a) What is the smallest positive angle measure of θ if it is an angle of depression of 179° ?
b) A boat travels 45 mi on a bearing of 31° , then travels on a bearing of $N 239^\circ W$ for 150 mi. Find the distance traveled from the starting point to the ending point.
7. a) Find EXACTLY: $\cos\left(\frac{-13\pi}{3}\right)$
b) Convert this degree measure (to 3 decimal places) to radians in terms of pi: $226^\circ 42' 28''$
8. Given a circle with radius $r = 20.4$ in and a central angle $\theta = 283.32^\circ$,
a) Find the arc length swept out by θ .
b) Find the area of the sector swept out by θ .
9. a) Approximate angle α in the interval $[90^\circ, 180^\circ]$ to four decimal places if $\csc \alpha = 3.7286$
b) Approximate angle θ in the interval $[\pi, \frac{3\pi}{2}]$ to three decimal places if $\cot \theta = 3.245$
10. A belt runs a pulley of radius 15 ft at 6 revolutions per second.
a) Find the angular speed of the pulley in radians per second.
b) Find the linear speed of the belt in ft per second.