

Math 144
Practice Exam Chap 7

1. When a clock reads 4:00, what is the radian measure of the smaller angle between the hands?
(Give an exact result).

2. Convert $3\pi/5$ to degrees.

4. Find the exact values of $\sin \pi/3$, and $\tan 11\pi/6$.

5. If $\tan \alpha = 2/3$ and $\cos \alpha < 0$ compute $\sin \alpha$.

6. Graph one period for $y = 3 \sin (x - \pi/4)$. List x-intercepts and turning points.

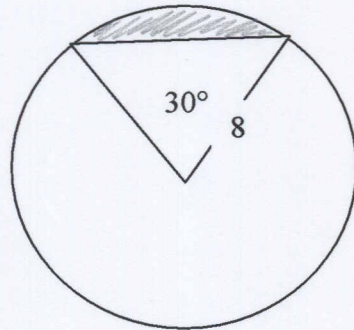
7. Graph one period for $y = -1/2 \cot (x/2)$

8. Find the amplitude, period, and phase shift for $y = 3/8 \cos(2x - \pi/4)$.

9. Which of the following functions are even? There may be more than one.

- a. $y = \sin^2 x$
- b. $y = 4 \sin x \cos x$
- c. $y = \cos^3 x$
- d. $y = \tan x$
- e. $y = \sin^3 x$

10. Find the area of the shaded segment shown below. Give an exact result.



11. A mass is suspended from a spring and can be modeled by the function $y = 10 \sin 4\pi t$. Find (a) the amplitude, period, and frequency of the motion of the mass;

(b) sketch the graph of the displacement of the mass;

(c) what is the minimum amount of time that passes (after $t = 0$) before the y coordinate is zero;

(d) what (after $t = 0$) is the minimum amount of time that passes for the y -coordinate to be -10 ?

12. Find all solutions to $\cos(x) = 0.7$ in the interval $0 < x < 2\pi$ (give your answer(s) accurate to 4 decimal places)