Math 1330 Test 2 Review

Where: CASA Testing Center(s) – Look in your confirmation email

Time: 50 minutes

Questions: 11 Multiple Choice + 3 Free Response = Total 14

Points: 67 for Multiple Choice Part + 33 Free Response = Total 100

What is covered: **All sections of Chapter 4**

What to bring: **Cougar card**

Make up Policy: ***NO MAKE-UPS!***

Plan to be at the testing center 10-15 minutes before
your scheduled time. If you are late, then try to
reschedule through your CASA account.

If you miss your test, you will get a zero for the test.
Your Final exam score will replace ONE lowest score test grade.
No calculators allowed during the test!

How to study:

- Make sure you do understand all the concepts covered.
- Solve ALL problems on this review sheet.
- Take Practice Test 2 BEFORE your test.
  It is for practice AND extra credit.
  10% of your best score will be added to your Test 2 score.
- Know how to write COMPLETE answers to free response problems.
  NO skipping steps!

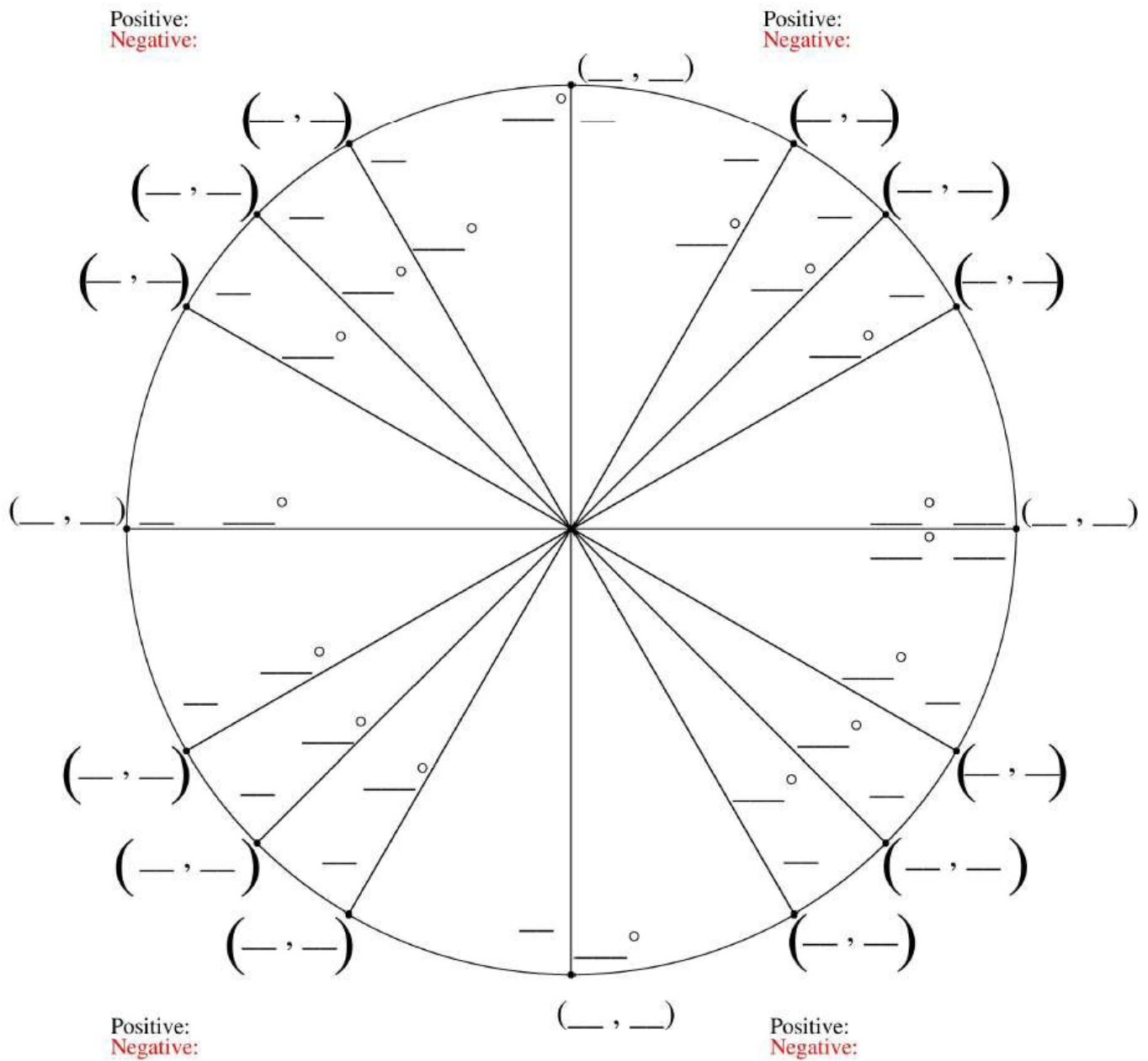1. Convert the following degree measures to radians.

    a. 120°

    b. 225°

2. Convert the following radian measures into degrees.

    a. $\dfrac{5\pi}{6}$

    b. $\dfrac{61\pi}{36}$

KNOW YOUR UNIT CIRCLE!

Unit circle will not be provided; make sure you know it!

$(\_\_ , \_\_)$

$(\_ , \_)$

$(\_ , \_)$

$(\_ , \_)$

$(\_ , \_)$

$(\_ , \_)$

$(\_ , \_)$

$(\_\_ , \_\_)$

$(\_\_ , \_\_)$

$(\_ , \_)$

$(\_ , \_)$

$(\_ , \_)$

$(\_ , \_)$

$(\_ , \_)$

$(\_ , \_)$

$(\_\_ , \_\_)$

3. Evaluate the following if possible:

a. $\sin(300°)$

b. $\tan\left(\frac{3\pi}{4}\right)$

c. $\sec(150°)$

d. $\csc\left(-\frac{2\pi}{3}\right)$

e. $\sin(180°)$

f. $\cos(90°)$

g. $\cot\left(\frac{\pi}{2}\right)$

h. $\tan(90°)$

i. $\tan\left(\frac{3\pi}{2}\right)$

j. $\cot(180°)$

4. A car has wheels with a 10-inch radius. If each wheel's rate of turn is 4 revolutions per second, how fast is the car moving in units of in/sec?
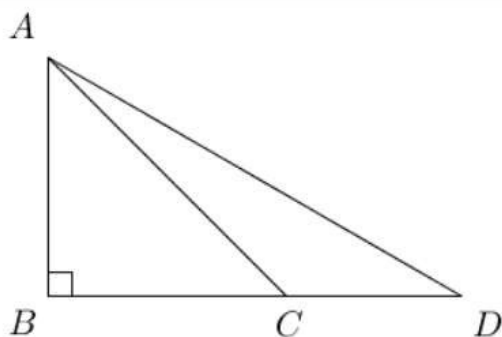
5. Find the area of the sector of a circle with central angle
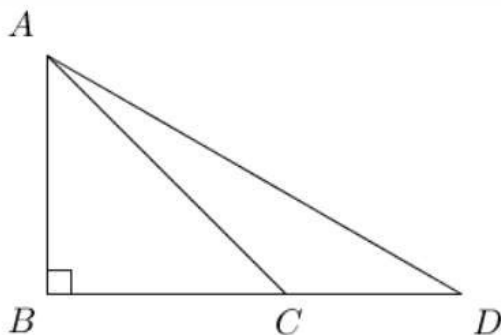
   a. $\theta = 225°$ and radius $r = 4\ ft.$

   b. $\theta = \frac{2\pi}{3}$ and radius $r = 30\ in.$

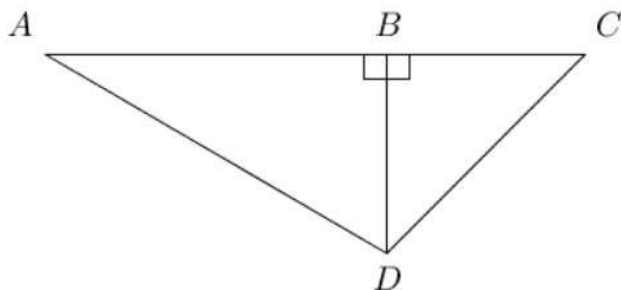KNOW THE SPECIAL TRIANGLES: $30° - 60° - 90°$ and $45° - 45° - 90°$

6. a) In the figure below, angle B is a right angle, $m(D) = 30°$ and $m(ACB) = 60°$. If $AC = 8$, find the length of AD.

b) In the figure below, angle B is a right angle, $m(D) = 45°$ and $m(ACB) = 60°$. If $AC = 10$, find the length of AD.

c) In the figure below, BD is an altitude in the triangle ABC, $m(A) = 30°$ and $m(C) = 45°$. If $CD = 20$, find the length of AD and AB.

KNOW TRIANGLE FACTS!

- The sum of the three angles of a triangle add up to $180°$.

- If one side of a triangle is longer than another side, then the angle opposite the longer side will have a greater degree measure than the angle opposite the shorter side, and viceversa.

- Pythagorean Theorem: $a^2 + b^2 = c^2$

7. In tringle ABC, the sides have length $8, 15$ and 17.
   If A is the smallest angle, find $cos(A)$ and $tan(A)$.

8. Given a triangle ABC with right angle C, $AC = 7$ and $AB = 10$.
   Find all six trigonometric functions of angle A.

9. Let $P(x, y)$ denote the point where the terminal side of an angle θ meets the unit circle. If P is in Quadrant IV and $x = \frac{4}{5}$, evaluate the six trigonometric functions of θ.

10. a) Given $\cos(\theta) = -\frac{4}{5}$ and $\tan(\theta) > 0$, find $\csc(\theta)$.

    b) Given $\sin(\theta) = -\frac{1}{4}$ and $\tan(\theta) < 0$, find $\cos(\theta)$.

11. Simplify the following expressions:

a) $\dfrac{9\tan(x)\cot(x)}{3sin^2(x)+3cos^2(x)}$

b) $4sin^2(x) + 4cos^2(x) + 1 + \tan^2(x)$

c) $2\sec(x)\cot(x) + 2\csc(x)\tan(x)$

d) $5\sin(x)\csc(x) - 2\cos(x)\sec(x)$