

# Math 120 Quiz 6

Olympic College , Winter Quarter, 2008

Instructor Elizabeth O'Neil

This is a take-home quiz due Tuesday, March 11, 2008. You may discuss this quiz with your class-mates, but you must submit your own work. Do your work on a separate sheet of paper. Nothing that appears on this cover page will be graded. You may hand in your quiz late (until the quizzes are returned), but you will lose 2 points for every day that it is late.

Solve the problem. (4 points)

1) Plot the point  $\left(4, \frac{\pi}{6}\right)$  and find other polar coordinates  $(r, \theta)$  of the point for which:

- (a)  $r > 0, -2\pi \leq \theta < 0$
- (b)  $r < 0, 0 \leq \theta < 2\pi$
- (c)  $r > 0, 2\pi \leq \theta < 4\pi$

Transform the polar equation to an equation in rectangular coordinates. Then identify and graph the equation. (4 points)

2)  $r = 2 \sin \theta$

Identify and use a table of values to graph the polar equation. (4 points)

3)  $r = 4 \sin(2\theta)$

Find the unit vector having the same direction as  $v$ . Remember to rationalize the denominator. (3 points)

4)  $v = -3i + j$

Solve the problem. (5 points)

5) A box of supplies that weighs 1500 kilograms is suspended by two cables as shown in the figure. To two decimal places, what is the tension in each of the two cables? Hint: see an example in section 9.2 of your text.

