Assignment 2
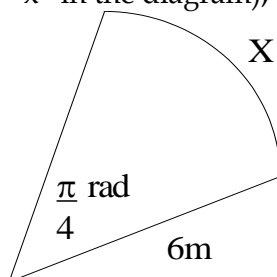
Math621B   due October 26, 2021

Do all of your work on this sheet. You **must** show me some steps!

1. A cardboard box has dimensions of (15 - x), (24 - 2x), and x. If the volume of the box is 648 cm³, find the dimensions.

2. How long is the arc length (marked with an "x" in the diagram), to the nearest cm?

X

$\frac{\pi}{4}$ rad

6m

3.The crankshaft on a car turns at a rate of 1050 rpm. Find the angular velocity of the crankshaft in radians per second (rad/s).

4. The tires on a tractor have a diameter of 1.2m. The wheels turn 80 times (80 rev.) as you drive the length of a potato field. How long is the field in metres?

7.The terminal arm of an angle passes through $(-3,4)$. What is the exact value of the sine of the angle (between the terminal arm and the x axis)

5. When you plough the field in #4, you drive the length of the field in 36 seconds. How fast are you travelling in km/h?

8.Solve $x^4 - 2x^3 - 19x^2 + 32x + 48 = 0$

6.What is the exact value of cos θ?

θ

P(12,-5)