Math 120 Group Worksheet **(***Review)* **Name**_____

Directions: Work in groups of 2-3 people. You may need extra paper.

1. Complete the statement:

A parabola is the set of

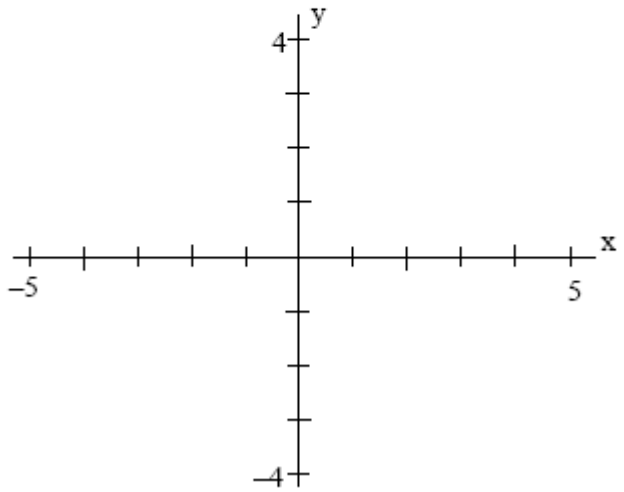
points equidistant from

2.

(a) Sketch the parabola $8y = x^2$ (4)

(b) The focus is at (,)

(c) The equation of the directrix is _____

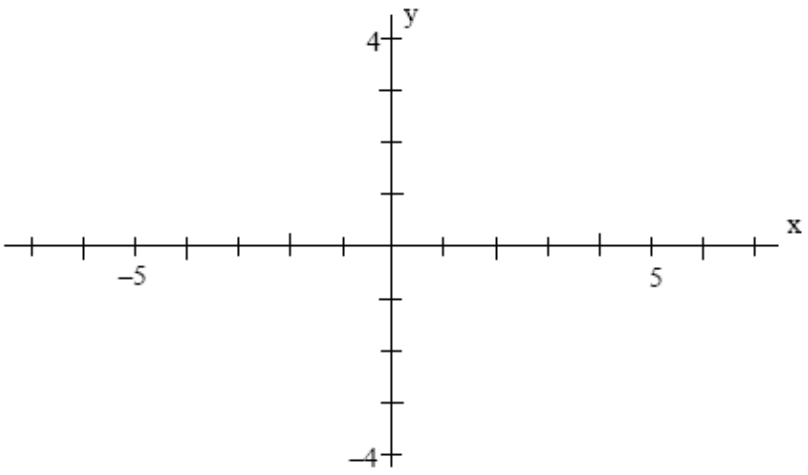


3.

Use your calculator to carefully graph the polar coordinate equation

$r = \dfrac{3}{1 + 0.5\cos(\theta)}$ for $0 \le \theta \le 2\pi$ in the window $-7 \le x \le 7$, $-4 \le y \le 4$.

Label the points where $\theta = 0, \pi/2, \pi, 3\pi/2$ and 2π.



4. A car and a boat leave a port city at the same time. The cars drives due north at 50 miles per hour. The boat goes 15 miles per hour on a bearing of N40°E.
How far apart are the car and the boat 2 hours after they leave port? _____

5.
Carefully **sketch and label**
the vector U = A - B + C

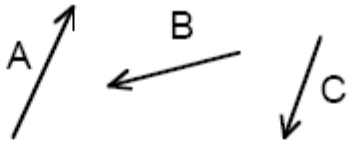


Fig. 2

Carefully **sketch and label**
a vector **V** so the three
vectors A, B and V will be
in equilibrium.

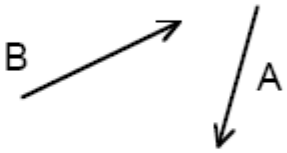


Fig. 3

Carefully **sketch and label**
W = the projection of P onto Q

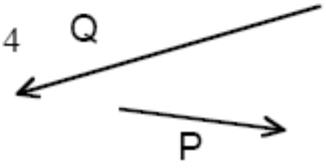


Fig. 4

6.
A force vector F = ⟨ 30 , 40 ⟩ (units are pounds) is used to pull an object from location A = (0,5) to location B = (16, 9) (units are feet) .

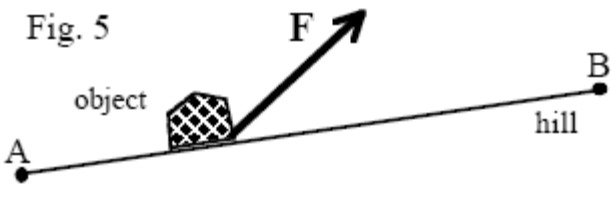


Fig. 5

(a) $\| F \|$ = _____ (include units)
(b) $\| \overrightarrow{AB} \|$ = _____ (include units)
(c) What is the angle between F and the hill? _____