

# C11 - 8.0 - Systems Review

Point on Line/Curve?  
Intersections  
Word Problems

1)

a) Is  $(-4, -3)$  a point on the lines?

$$y = x + 1 \quad \& \quad y = -2x + 1$$

b) Is  $(-2, 1)$  the intersection of the following pairs of lines?

$$y - 3 = x \quad \& \quad 3x = -5 - y$$

c) Is  $(-2, -4)$  a point on the parabola/curve?

$$y = -x^2 \quad \& \quad y = x^2 - x$$

d) Is  $(-2, 1)$  the intersection of the following pairs of lines/curves?

$$y = -(x - 2)^2 + 1 \quad \& \quad y = 6 - 2x$$

e) Is  $(7, 3)$  an intersection of the following pairs of lines/curves?

$$y + 5 = 2(x - 5)^2 \quad \& \quad y + x^2 = 10x - 18$$

2) Solved by algebra and graphing.

Lin/Quad

a)

$$y - 1 = x$$

$$y = x^2 - 1$$

b)

$$0 = x - y + 4$$

$$y = x^2 + 2$$

c)

$$y = x^2$$

$$y + 1 = 2x$$

d)

$$2x - y = 5$$

$$y = x^2 - 4$$

e)

$$y + 3 = x^2 - 2x$$

$x$  - axis,  $y$  - axis

f)

$$y + 1 = x^2$$

$$4y = -x^2 + 16$$

g)

$$y + 3 + 2x = x^2$$

$$y + 1 = -2(x - 1)^2$$

h)

$$y = x^2 + 1$$

$$y + x^2 - 1 = 0$$

i)

$$y = -x^2 + 8x - 12$$

$$y = 2x^2 - 28x + 96$$

j)

$$y = x^2 + 2x - 1$$

$$2y = 2x^2 + 8x + 10$$

k)

$$\frac{y}{2} = \frac{x^2}{2} - \frac{3x}{2} - 2$$

$$y = -x^2 - 13$$

3) Hill

$$h = \frac{1}{3}x$$

Soccer Kick

$$h = -\frac{1}{16}(x - 8)^2 + 5$$

Find/Interpret Intersection

4) The height vs distance of a bow and arrow shot off a cliff is:

$$h = -2d^2 + 8d + 10$$

At what distance is the height 16 m?

How far did the arrow fly before it hit the ground?

5) The height vs time of a rock shot straight up is:

$$h = -4.9t^2 + 50t + 1$$

At what time is the height 50 m?

$(1.10, 50)(9.11, 50)$

How long until the rock hit the ground?

6) Selling Jeans

Profit = Revenue - Cost

$$R = -x^2 + 200x$$

$$C = 10x + 1800$$

Graph Revenue and Cost.

Find Break Even Points.