

Current Score: 0/132 Due: Thu Oct 9 2014 11:59 PM PDT

Question	1	2	3	4	5	6	7	8	9	10	Total
Points	0/8	0/12	0/25	0/17	0/12	0/12	0/12	0/12	0/10	0/12	0/132

1. 0/8 points

UWAPreCalc1 4.P.001. [2124819]

This exercise emphasizes the "mechanical aspects" of working with linear equations. Find the equation of a line with the following characteristics.

- (a) Passing through the points  $(1, -1)$  and  $(-3, 4)$ .
- (b) Passing through the point  $(-1, -2)$  with slope  $m = 10$ .
- (c) With  $y$ -intercept  $b = -4$  and slope  $m = -3$ .
- (d) Passing through the point  $(3, 13)$  and having slope  $m = 0$ .
- (e) Perpendicular to the line in (a) and passing through  $(7, 7)$ .
- (f) Parallel to the line in (b) and having  $y$ -intercept  $b = -11$ .
- (g) In slope intercept form having the equation  $5x + 3y = 7$ .
- (h) Crossing the  $x$ -axis at  $x = 2$  and having slope  $m = 1$ .

2. 0/12 points

UWAPreCalc1 4.P.003. [2424381]

(a) What is the area of the triangle determined by the lines  $y = -\frac{1}{2}x + 9$ ,  $y = 10x$ , and the  $y$ -axis?

(b) If  $b > 0$  and  $m < 0$ , then the line  $y = mx + b$  cuts off a triangle from the first quadrant. Express the area of that triangle in terms of  $m$  and  $b$ .

(c) The lines  $y = mx + 5$ ,  $y = x$ , and the  $y$ -axis form a triangle in the first quadrant. Suppose this triangle has an area of 10 square units. Find  $m$ .

$m =$

3. 0/25 points

UWAPreCalc1 4.P.004. [2502025]

Complete the table below. (If an answer is undefined, enter UNDEFINED. If an answer does not exist, enter DNE.)

Equation	Slope	y-intercept	Point on the line (x, y)	Point on the line (x, y)
$y = 3x + 1$	<input type="text"/>	<input type="text"/>	$(0, \text{})$	$(\text{}, 0)$
$y =$	<input type="text"/>	<input type="text"/>	$(3, -4)$	$(-1, 7)$
$y =$	$-5$	$1$	$(0, \text{})$	$(\text{}, 0)$
$y =$	$\frac{1}{4}$	<input type="text"/>	$(0, 1)$	$(\text{}, 0)$
$y =$	$0$	$100,000$	$(0, \text{})$	$(3, \text{})$
$y =$	$0$	$0$	$(0, \text{})$	$(5, \text{})$
$x =$	<input type="text"/>	<input type="text"/>	$(2, 2)$	$(2, -5)$
$y =$	$1$	<input type="text"/>	$(2, -6)$	$(0, \text{})$

4. 0/17 points

UWAPreCalc1 4.P.005. [2424385]

The (average) sales price for single family property in Seattle and Port Townsend is tabulated below.

Year	Seattle	Port Townsend
1970	\$38,000	\$8,400
1990	\$175,000	\$168,400

(a) Find a linear model relating the year  $x$  and the sales price  $y$  for a single family property in Seattle.

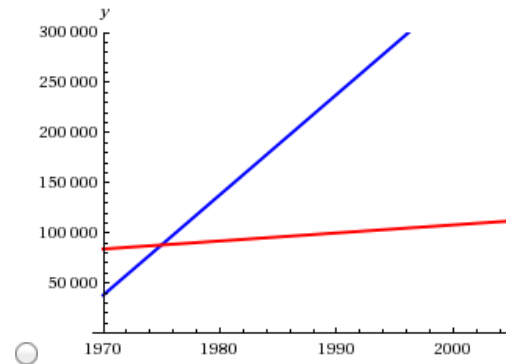
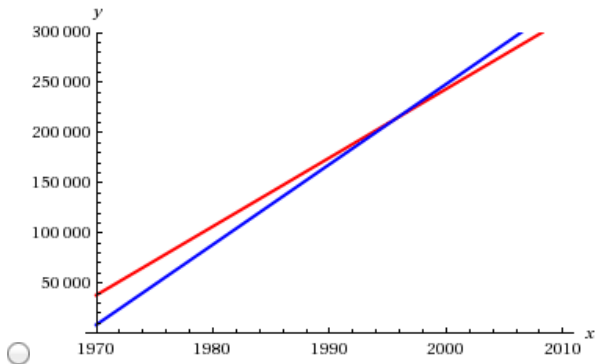
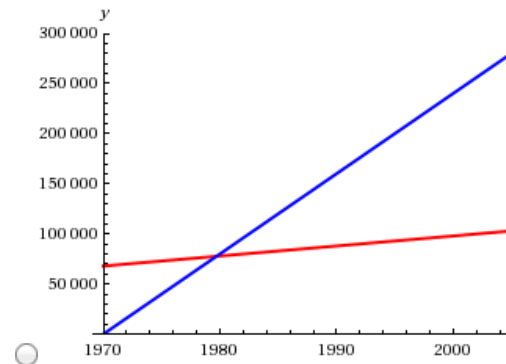
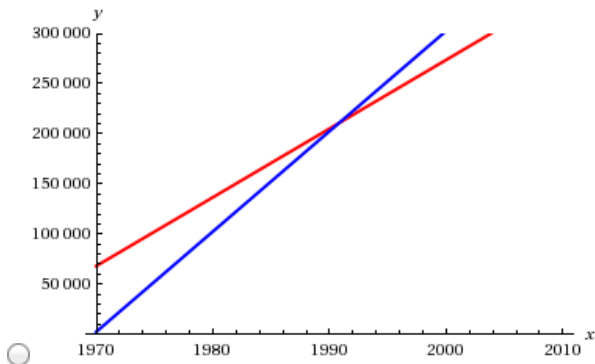
$y =$

(b) Find a linear model relating the year  $x$  and the sales price  $y$  for a single family property in Port Townsend.

$y =$

(c) Sketch the graph of both modeling equations in a common coordinate system; restrict your attention to

$x \geq 1970$ .



(d) What is the sales price in Seattle and Port Townsend in 1983 and 2003? (Fill in the table below.)

Year	Seattle	Port Townsend
1983	\$ <input type="text"/>	\$ <input type="text"/>
2003	\$ <input type="text"/>	\$ <input type="text"/>

(e) When will the average sales price in Seattle and Port Townsend be equal? (Round your answer to to the nearest whole number.)

What is this price? (Round your answer to to the nearest whole number.)

\$

(f) When will the average sales price in Port Townsend be \$15,000 less than the Seattle sales price? (Round your answer to to the nearest whole number.)

What are the two sales prices at this time? (Round your answers to to the nearest whole number.)

Seattle \$

Port Townsend \$

(g) When will the Port Townsend sales price be \$15,000 more than the Seattle sales price? (Round your answer to to the nearest whole number.)

What are the two sales prices at this time? (Round your answers to to the nearest whole number.)

Seattle \$

Port Townsend \$

(h) When will the Seattle sales price be double the Port Townsend sales price? (Round your answer to to the nearest whole number.)

(i) Is the Port Townsend sales price ever double the Seattle sales price?

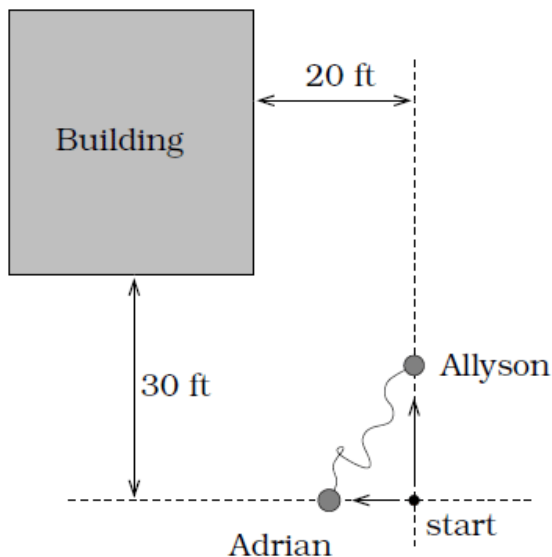
Yes

No

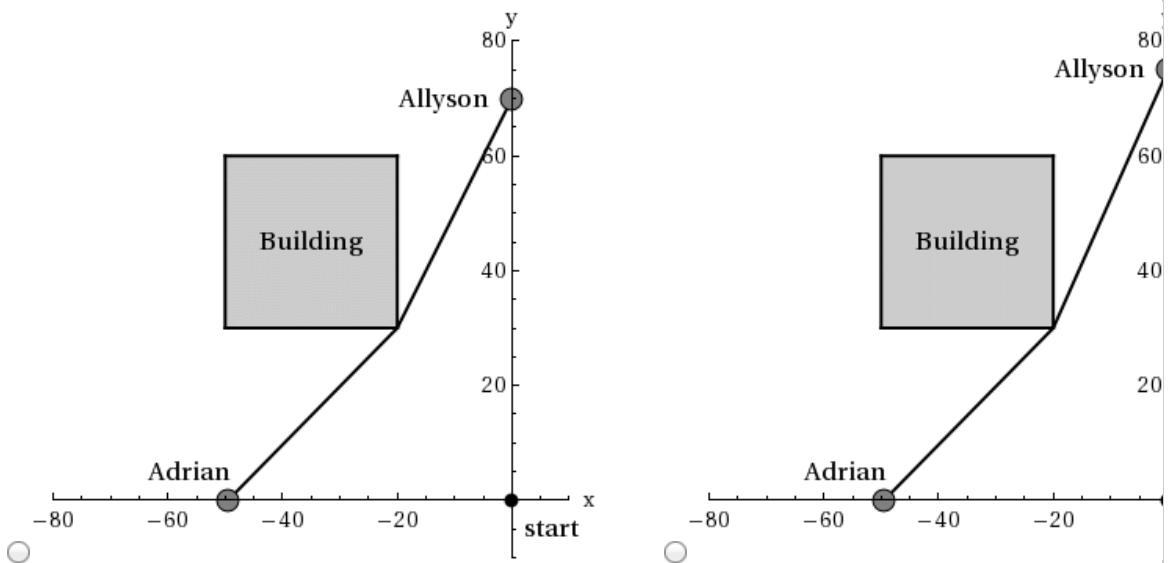
5. 0/12 points

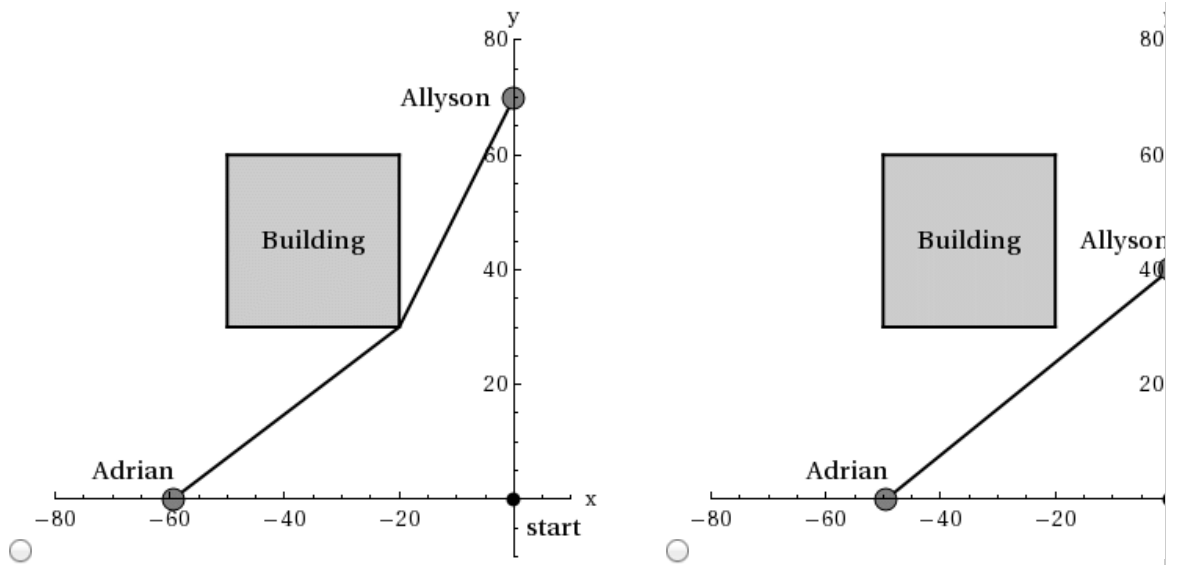
UWAPreCalc1 4.P.007. [2124908]

Allyson and Adrian have decided to connect their ankles with a *bungee cord*; one end is tied to each person's ankle. The cord is 30 feet long, but can stretch up to 90 feet. They both start from the same location. Allyson moves 10 ft/sec and Adrian moves 9 ft/sec in the directions indicated. Adrian stops moving at time  $t = 5.5$  sec, but Allyson keeps on moving 10 ft/sec in the indicated direction. (If a coordinate system is used, assume that the girls' starting position is located at  $(x, y) = (0, 0)$  and that Allyson and Adrian move in the positive  $y$  and negative  $x$  directions, respectively. Let one unit equal one foot.)



(a) Sketch an accurate picture of the situation at time  $t = 7$  seconds. Make sure to label the locations of Allyson and Adrian.





Compute the length of the bungee cord at  $t = 7$  seconds. (Round your answer to three decimal places.)

ft

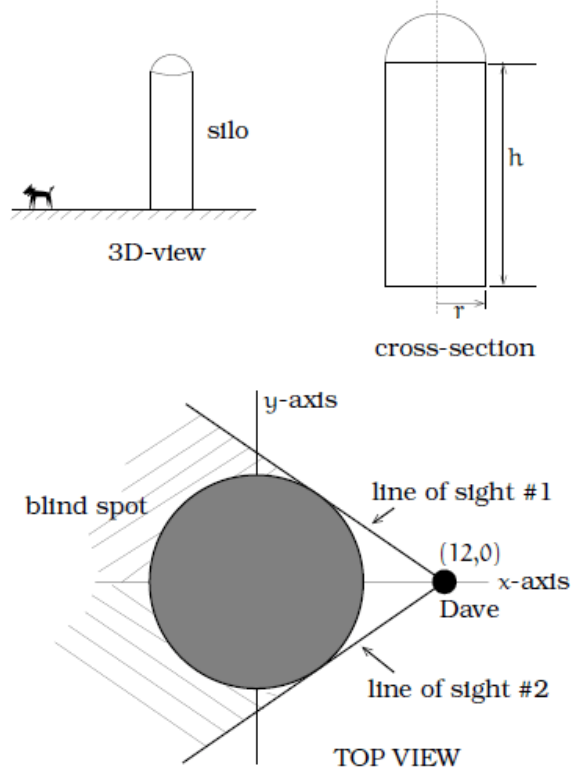
(b) Where is Allyson when the bungee reaches its maximum length? (Round your answers to three decimal places as needed.)

$(x, y) = ( \quad , \quad )$

6. 0/12 points

UWAPreCalc1 4.P.008. [2125426]

Dave is going to leave academia and go into business building *grain silos*. A grain silo is a cylinder with a hemispherical top, used to store grain for farm animals. Here is a 3D view, a cross-section, and the top view.



If Dave is standing next to a silo of cross-sectional radius  $r = 5$  feet at the indicated position, his vision will be partially obstructed. Find the portion of the  $y$ -axis that Dave cannot see. (Hint: Let  $a$  be the  $x$ -coordinate of the point where line of sight #1 is tangent to the silo; compute the slope of the line using two points (the tangent point and  $(12, 0)$ ). On the other hand, compute the slope of line of sight #1 by noting it is perpendicular to a radial line through the tangency point. Set these two calculations of the slope equal and solve for  $a$ . Enter your answer using interval notation. Round your answer to three decimal places.)

7. 0/12 points

UWAPreCalc1 4.P.010. [2124802]

Pam is taking a train from the town of Rome to the town of Florence. Rome is located 40 miles due west of the town of Paris. Florence is 35 miles east, and 55 miles north of Rome.

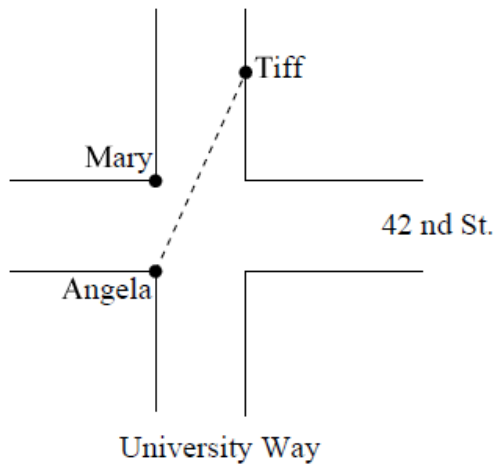
On her trip, how close does Pam get to Paris? (Round your answer to three decimal places.)

 mi

8. 0/12 points

UWAPreCalc1 4.P.011. [2125447]

Angela, Mary, and Tiff are all standing near the intersection of University and 42<sup>nd</sup> streets. Mary and Tiff do not move, but Angela runs toward Tiff at 14 ft/sec along a straight line, as pictured. Assume the roads are 40 feet wide and Tiff is 60 feet north of the nearest corner.



Where is Angela located when she is closest to Mary? (Let Angela's initial location be the origin. Round your answers to two decimal places.)

$$(x, y) = ( \quad )$$

When does she reach this spot? (Round your answer to one decimal place.)

 sec

9. 0/10 points

UWAPreCalc1 4.P.013. [2125069]

Margot is walking in a straight line from a point 20 feet due east of a statue in a park toward a point 14 feet due north of the statue. She walks at a constant speed of 4 feet per second.

(a) Write parametric equations for Margot's position  $t$  seconds after she starts walking. (Round your coefficients to four decimal places as needed.)

$$x =$$

$$y =$$

(b) Write an expression for the distance from Margot's position to the statue at time  $t$ . (Round your coefficients to four decimal places as needed.)

(c) Find the times when Margot is 18 feet from the statue. (Round your answers to two decimal places)

$$t = \text{  sec (smaller value)}$$

$$t = \text{  sec (larger value)}$$

10. 0/12 points

UWAPreCalc1 4.P.014. [2125284]

Juliet and Mercutio are moving at constant speeds in the  $xy$ -plane. They start moving at the same time. Juliet starts at the point  $(0, -4)$  and heads in a straight line toward the point  $(10, 3)$ , reaching it in 10 seconds. Mercutio starts at  $(9, -12)$  and moves in a straight line. Mercutio passes through the same point on the  $x$ -axis as Juliet, but 2 seconds after she does.

How long does it take Mercutio to reach the  $y$ -axis? (Round your answer to three decimal places.)

 sec[Assignment Details](#)