NAME:
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HOMEWORK 5.6

Secondary Math II

Turned in On Time (4 pts.) ☐

0A. (2 pts.) Write the domain and range in interval notation.
$f(x) = -4x^2 + 9$

0B. (2 pts.) Write the domain and range in interval notation.
$g(x) = \sqrt{x-1}$

1. (1 pt.) Determine if the function is increasing or decreasing in-between the following points. x-intercept (3,0) and y-intercept (0,5)

2. (1 pt.) Change from interval notation to set notation.
$(-\infty,-1)\cup[1,5]$

3. (1 pt.) Factor. $2x^2 - 16x + 14$

$2(x-7)(x-1)$

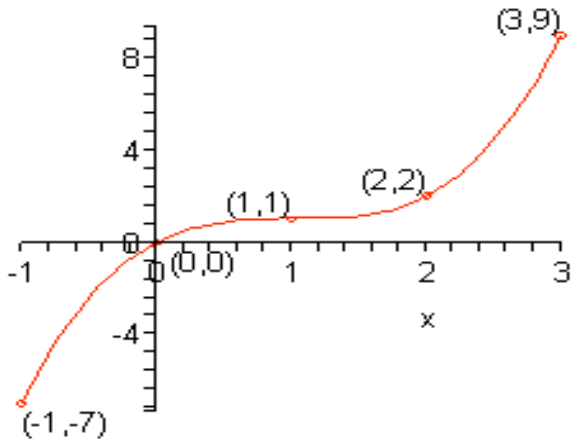
Classroom Exercise #4 (3 pts.) ☐

4A. (1 pt.) Find the slope of the line that passes through:
(3,3) and (-2,2)

4B. (1 pt.) Find the slope of the line that passes through:
(-4,7) and (3,0)
$m = -1$

4C. (1 pt.) Find the slope of the line that passes through:
(5,2) and (0,-1)

Find the average rate of change over the given interval.



5. (1 pt.)
(-1, 3)
$slope = 4$

6. (1 pt.)
(0,1)

7. (1 pt.)
(0, 3)

8. (1pt.)
(-1, 2)

Classroom Exercise #9 (3 pts.) ☐

Use the following function to find the average rate of change over the intervals.

$f(x) = x^2 - 3$

9A. (1 pt.)
(-1, 1)

9B. (1 pt.)
(1, 3) $slope = 4$

9C. (1 pt.)
(0, 2)

Find the average rate of the change from the given function.

10. (1 pt.)

$f(x) = x^2 + 6x - 7$ over interval (-7, 0)

$slope = 0$

11. (1 pt.)

$g(x) = -\frac{2}{3}x - 4$ over interval (-6, 9)

12. (1 pt.)

$h(x) = 8\left(\frac{1}{2}\right)^x$ over interval (0,2)

13. (1 pt.)

$q(x) = -x^2 + 4$ over interval (-3, 2)

Challenge

John and Ray run around a track. The table below shows each of their distances at 2-second time intervals.

Time (In Seconds)	0	2	4	6	8
John's Distance (In Meters)	0	4	15	22	27
Ray's Distance(In	0	5	14	20	25

14. (1 pt.)
What is John's average rate of speed from 0 to 4 seconds?

15. (1pt.)

What is John's average rate of speed from 2 to 8 seconds? $slope = \frac{23}{6}$

16. (1 pt

What is Ray's average rate of speed from 0 to 4 seconds?

17. (1 pt.)

What is Ray's average rate of speed from 2 to 8 seconds?

18. (1 pt.) **A**

Based on this table and your calculations above, which statement below is correct?

a. John's average rate of speed from 0 to 4 seconds is less than his average rate of speed from 2 to 8 seconds.
b. John's average rate of speed from 0 to 2 seconds is greater than his average rate of speed from 2 to 8 seconds.
c. Ray's average rate of speed form 0 to 4 seconds is less than his average speed from 4 to 8 seconds.
d. Ray's average rate of speed from 0 to 6 seconds is greater than his average rate of speed from 2 to 8 seconds.