Questions on 4.6 HW? We are taking a quiz today...so go over the practice quiz below...

Practice Quiz

1. If the following points exist in $f(x)$, fill in what would they be in the inverse.
   $f(x)$: $\{(-1,2),(-3,4),(-5,6)\}$

   $f^{-1}(x)$: _____

2. If a linear function, f(x), has the slope $-\frac{7}{9}$, what would the slope be in the inverse, $f^{-1}(x)$?

3. If the dependent variable in f(x) is feet, what is the independent variable in $f^{-1}(x)$?

4. If the dependent variable in $f^{-1}(x)$ is perimeter, what is the independent variable in f(x)?

5. If a function, f(x), has the following domain and range, fill in the domain and range for its inverse, $f^{-1}(x)$.

   f(x) domain: $(-\infty, 4]$

   f(x) range: $(3, \infty)$

   $f^{-1}(x)$ domain: _____

   $f^{-1}(x)$ range: _____

6. A function, f(x), and its inverse, $f^{-1}(x)$, reflect across the special line y=_____.

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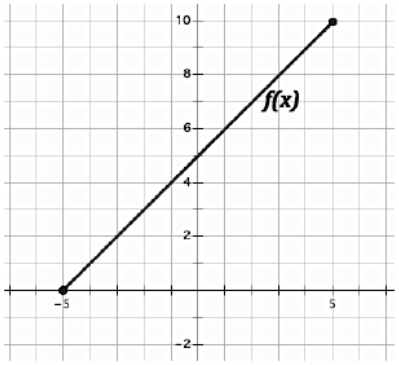
Given each representation of a function, determine the domain and range. Then indicate whether the function is discrete, continuous, or discontinuous and increasing, decreasing, or constant.

1.



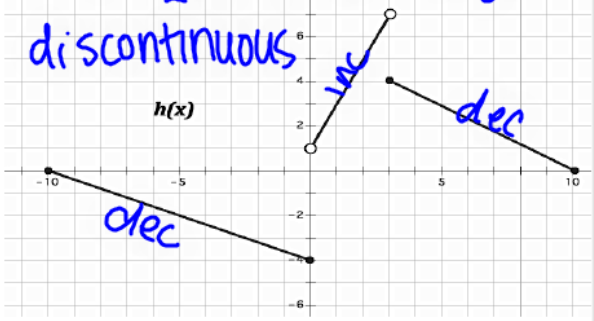
Description of Function:

2.

domain: $[-10, 10]$ or $-10 \leq x \leq 10$

range: $[-4, 7)$ or $-4 \leq y < 7$

discontinuous



Description of Function:

decreasing: $(-10, 0)$ & $(3, 10)$

increasing: $(0, 3)$

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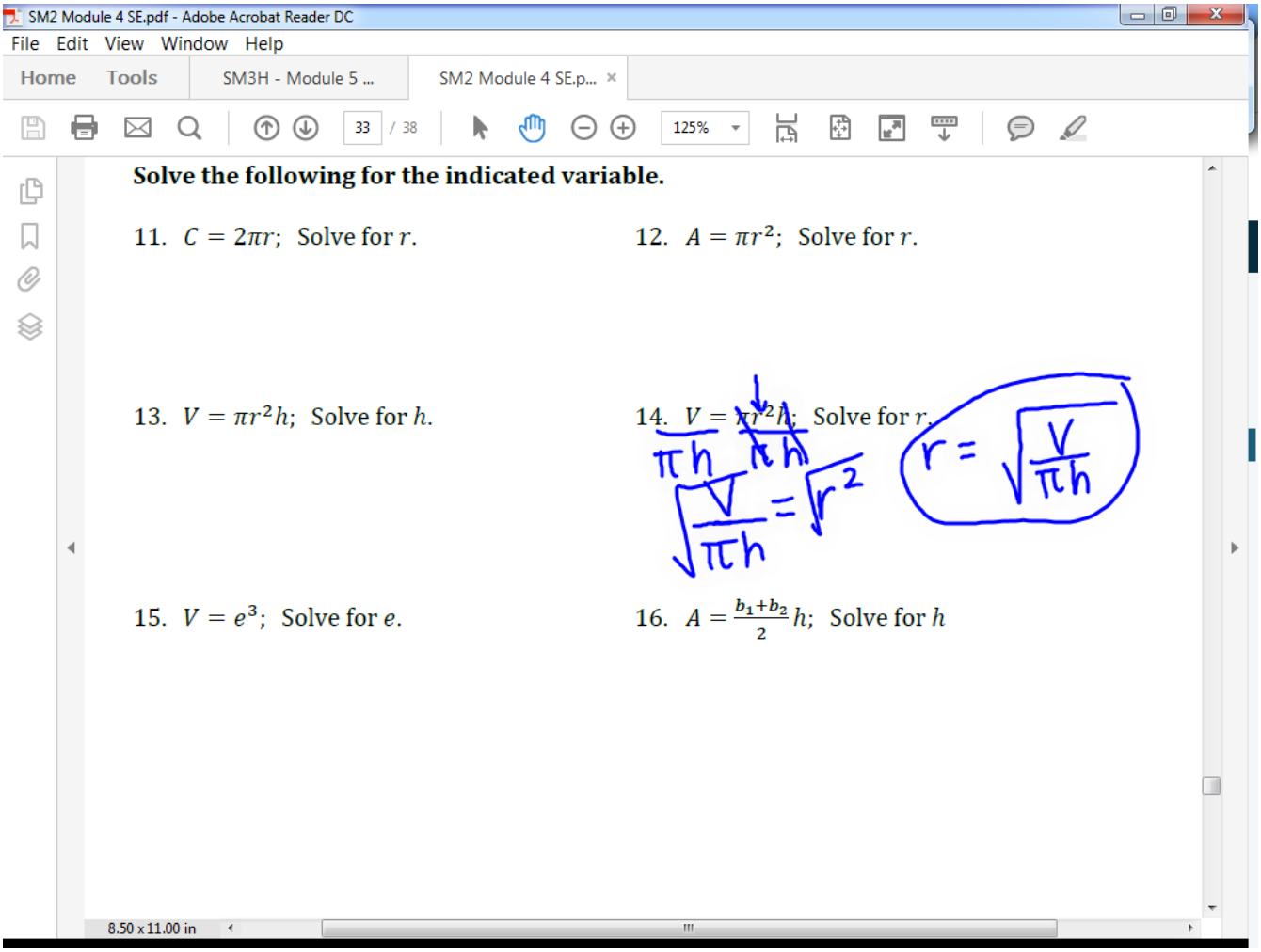
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Solve the following for the indicated variable.
11. $C = 2\pi r$; Solve for r.
12. $A = \pi r^2$; Solve for r.
13. $V = \pi r^2 h$; Solve for h.
14. $V = \pi r^2 h$; Solve for r.
$r = \sqrt{\frac{V}{\pi h}}$
15. $V = e^3$; Solve for e.
16. $A = \frac{b_1+b_2}{2}h$; Solve for h
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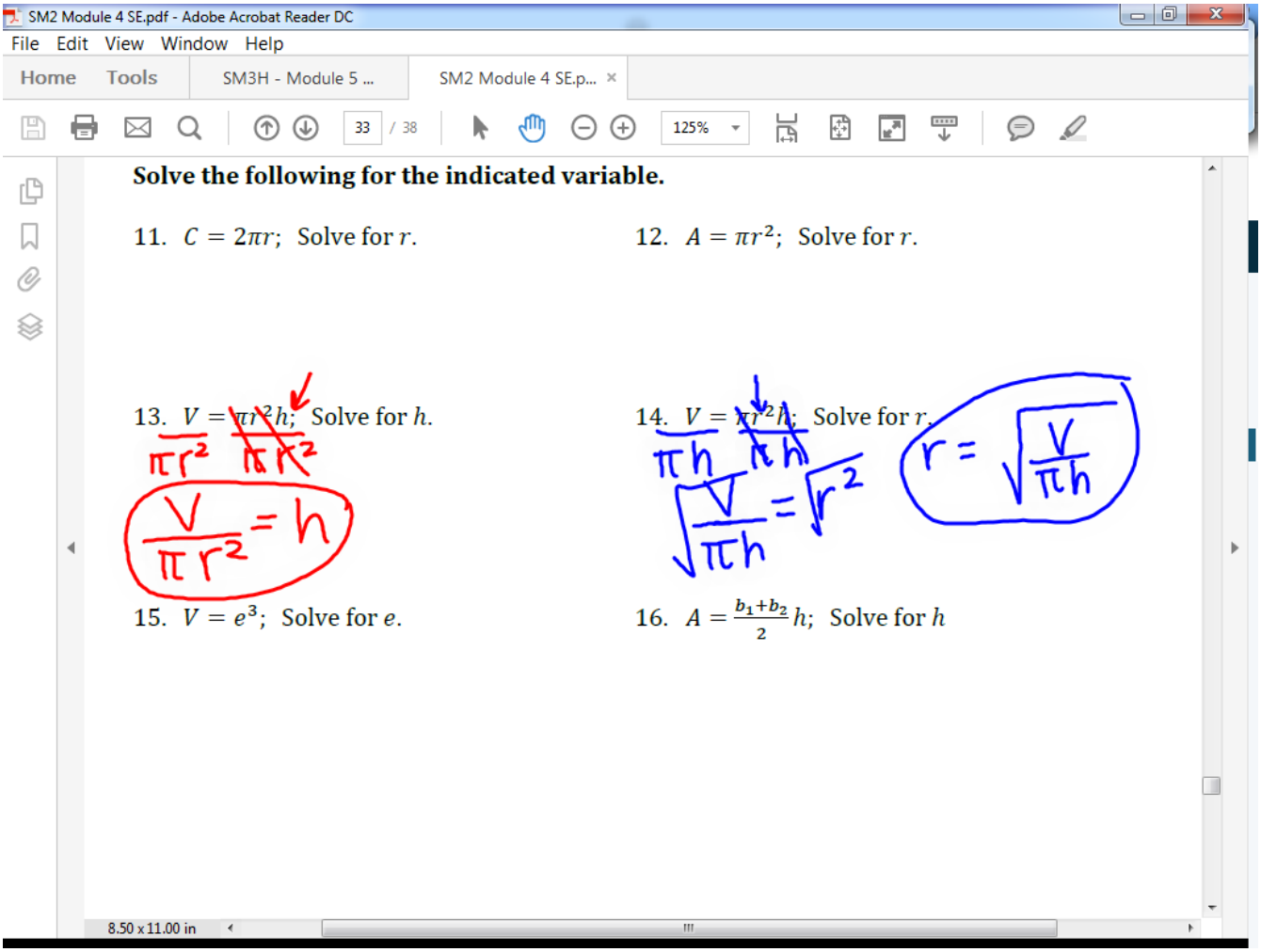
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Solve the following for the indicated variable.
11. $C = 2\pi r$; Solve for r.
12. $A = \pi r^2$; Solve for r.
13. $V = \pi r^2 h$; Solve for h.
$\frac{V}{\pi r^2} = h$
14. $V = \pi r^2 h$; Solve for r.
$r = \sqrt{\frac{V}{\pi h}}$
15. $V = e^3$; Solve for e.
16. $A = \frac{b_1+b_2}{2}h$; Solve for h
8.50 x 11.00 in

4.7 More Features, More Functions

A Practice Understanding Task

Part I: Features of Functions

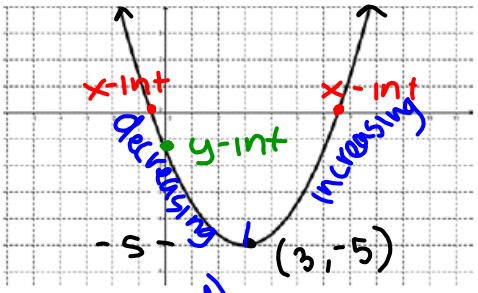
Find the following key features for each function:

a. Domain and range
b. Intercepts (x & y)
c. Location and value of maxima/minima
d. Intervals where function is increasing or decreasing

intervals

points

1.



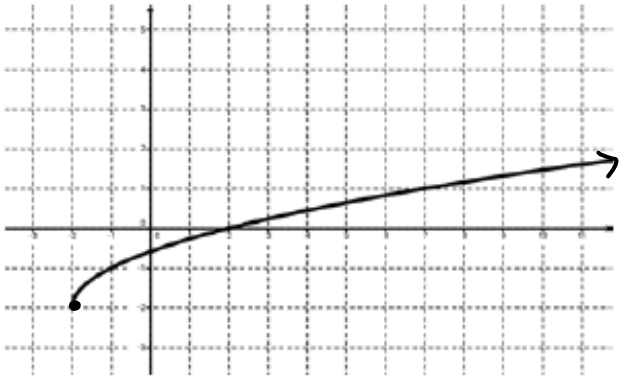
a) domain: $(-\infty, \infty)$
range: $[-5, \infty)$

b) x-int: $(-\frac{1}{2}, 0)$ & $(6\frac{1}{2}, 0)$
y-int: $(0, -1\frac{1}{2})$

c) min: $(3, -5)$
*no max

d) increasing: $(3, \infty)$
decreasing: $(-\infty, 3)$

2.



3.

x	$f(x)$
-5	-14
1	4
-2	-5
3	10
5	16
0	1
-1	-2

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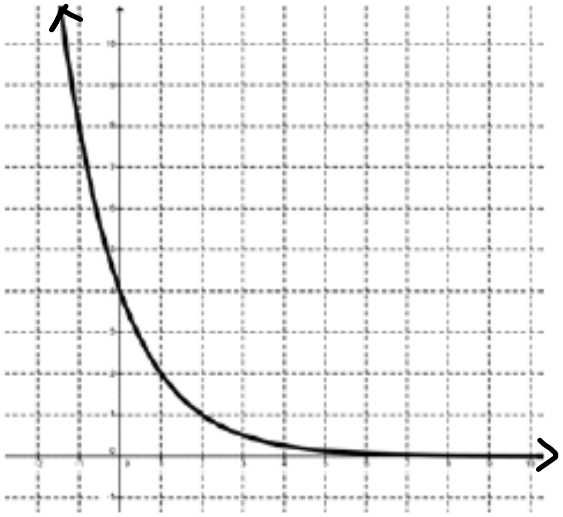
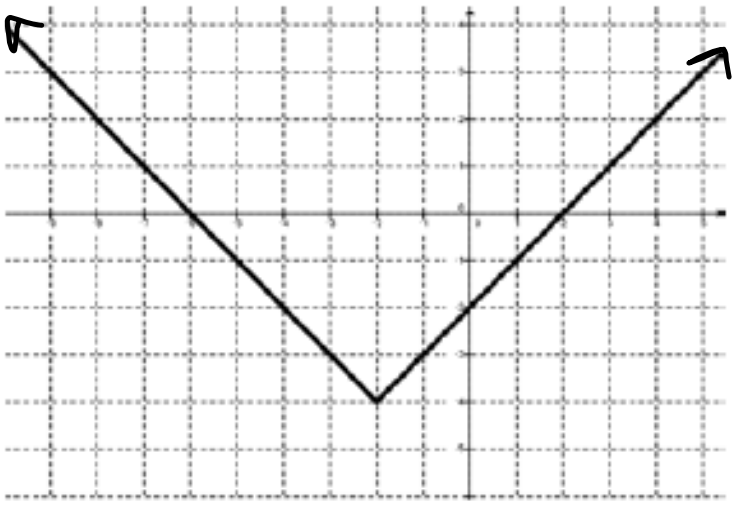
4.



5. $g(x) = -\frac{1}{3}(x+4)^2 - 6$

6.



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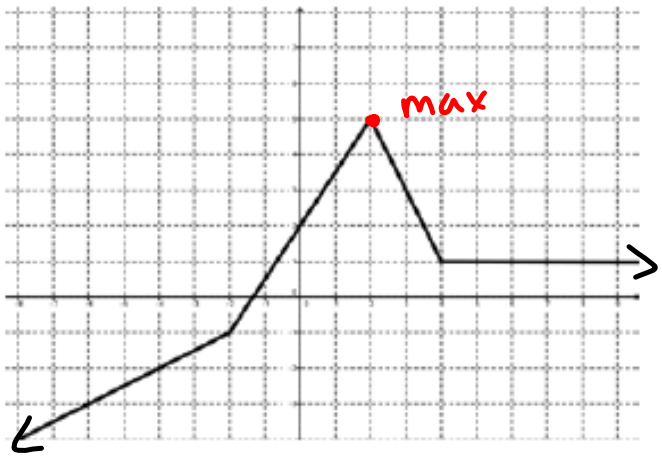
7.



8. $h(x) = \sqrt{x-3}$

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Part II: Creating Functions

Directions: Write **two** different functions that meet the given requirements.

9. A function that is always increasing

10. A function that is symmetrical about the y-axis

11. A function with a minimum of -2 at x =5

12. A function that is decreasing from $(-\infty, -3)$ then increasing from $[-3, \infty)$

13. A function with zero real roots

14. A function that has a domain from $[3, \infty)$

15. A function with a range from $[3, \infty)$

16. A function with a constant rate of change

17. A function whose second difference is a constant rate of change

18. A function whose domain is the set of all natural numbers, and has a constant difference from one value to the next.

19. A function with x-intercepts at (-3, 0) and (3,0)

20. Create your own requirements.

SKIP

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Homework

Finish 4.7 "Ready, Set, Go"

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