

Homework: Basics of Functions and Their Graphs

In Problems 1-6, Use the graph to determine the intervals on which the function is increasing, decreasing, and constant

1.

dec : $(-\infty, 1)$

inc : $(1, \infty)$

2.

inc : $(2, \infty)$

3.

dec : $(-2, 1)$

4.

con : $(-\infty, 2)$

dec : $(2, \infty)$

5.

dec : $(-\infty, -2)$

inc : $(-2, 2)$

dec : $(2, \infty)$

6.

con : $(-\infty, -1)$

inc : $(-1, 1)$

dec : $(1, 3)$

con : $(3, \infty)$

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In Problems 7-8, Use the graph to find any relative extrema (relative minimum's, relative maximum's)

7.

rel max: (-1.5, -2)

rel min: (2, -4)

8.

rel max: (-1, 4)

rel min: (3, -7)

In Problems 9-14, determine whether each function is even, odd, or neither

9. odd	10. neither
11. even	12. even
13. neither	14. odd

In Problems 15-16, Determine if the graph is the graph of an even function, odd function, or neither.

15. odd

16. neither

In Problems 17-18, use the graph to determine each of the following. Where applicable, use interval notation.

17.

a) $(-\infty, \infty)$	b) $(-\infty, 6]$	c) $(-5.7, 0), (1.5, 0), (5.8, 0)$
d) $(0, -4.4)$	e) <i>inc</i> : $(-\infty, -5.7)$ <i>dec</i> : $(-5.7, -2)$ <i>inc</i> : $(-2, 4)$ <i>dec</i> : $(4, \infty)$	f) rel max $(-5.7, 0)$ rel min $(-2, -6)$ rel max: $(4, 6)$
g) -2	h) $x = -1.3, -7.2$	i) neither

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18.

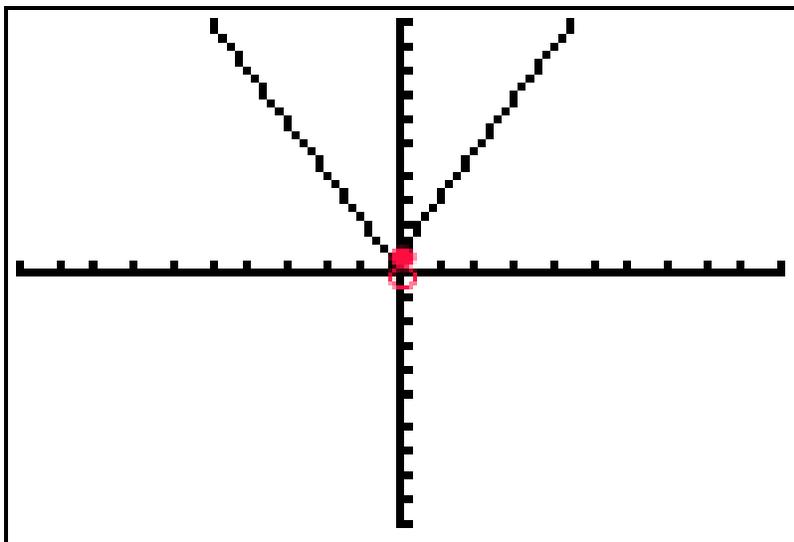
a) $(-\infty, \infty)$	b) $(-\infty, \infty)$	c) $(-5.7, 0), (0.8, 0), (5.7, 0)$
d) $(0, 1.8)$	e) <i>inc</i> : $(-\infty, -3)$ <i>dec</i> : $(-3, 3.2)$ <i>inc</i> : $(2, \infty)$	f) rel max: $(-3, 7)$ rel min: $(3.2, -5)$
g) -1	h) $x = -2.8$	i) neither

In Problems 19-21, evaluate each piecewise function at the given values of the independent variable

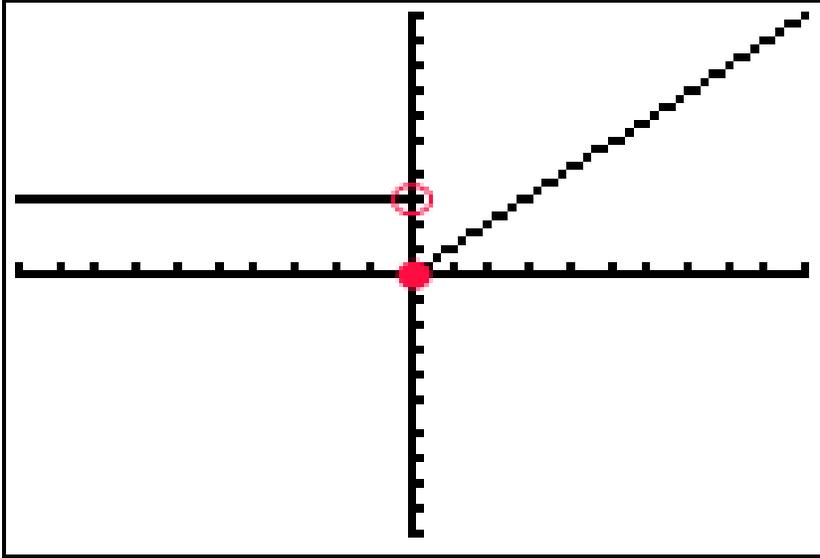
19. <i>a</i>) -14 <i>b</i>) -1 <i>c</i>) 39	20. <i>a</i>) -26 <i>b</i>) 6 <i>c</i>) 1
21. <i>a</i>) 6 <i>b</i>) 14 <i>c</i>) 42	

In Problems 22-27, graph each function

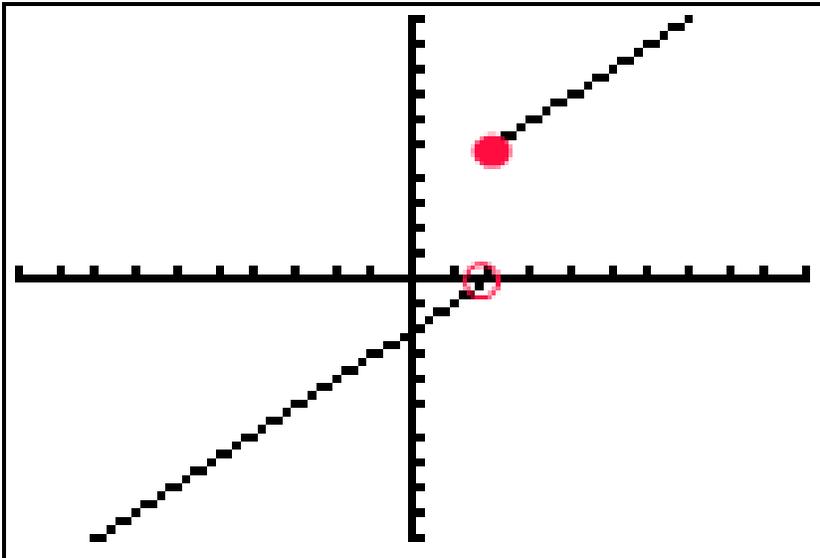
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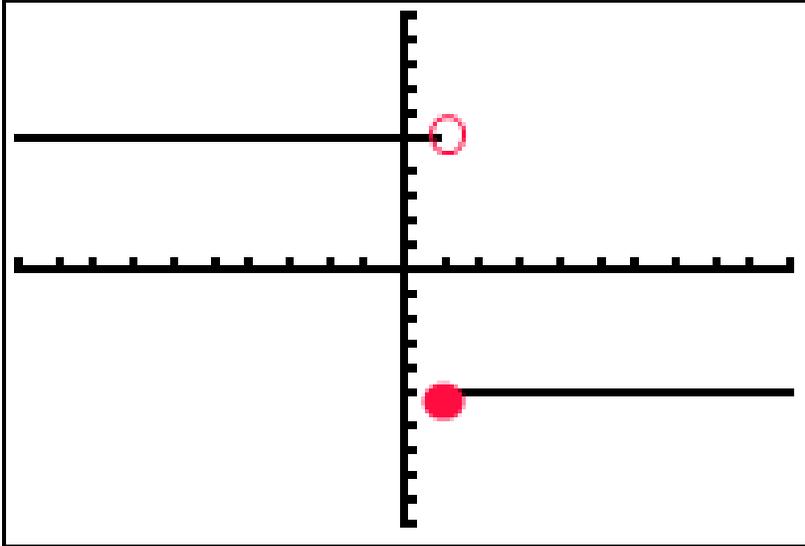
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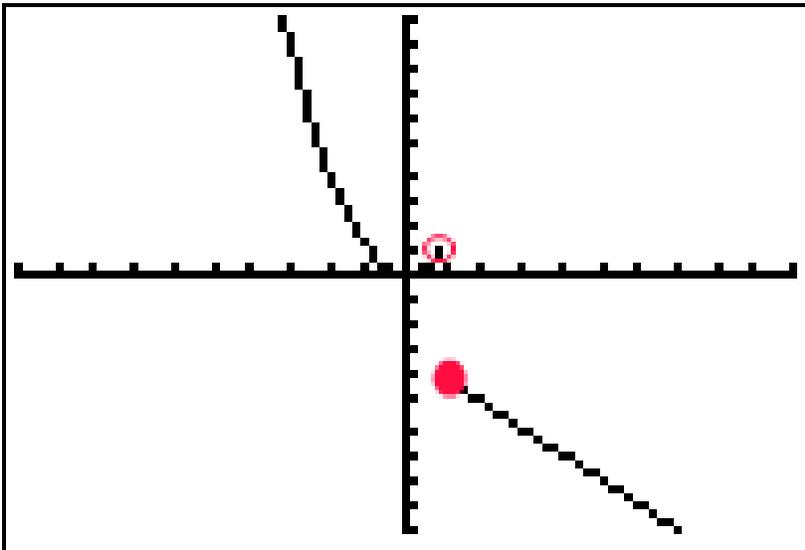
24.



25.



26.



27.

