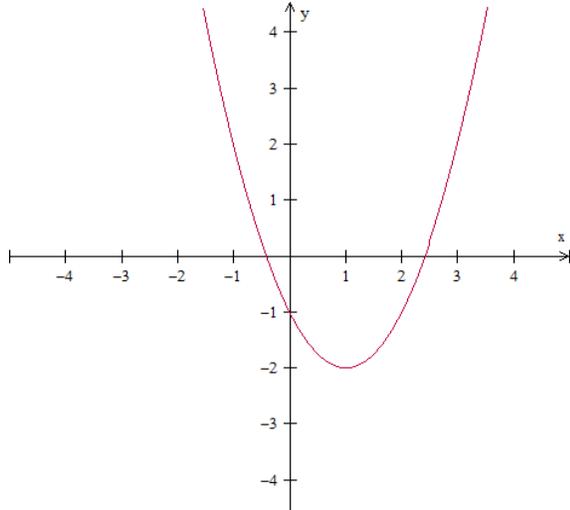


## Homework: Basics of Functions and Their Graphs

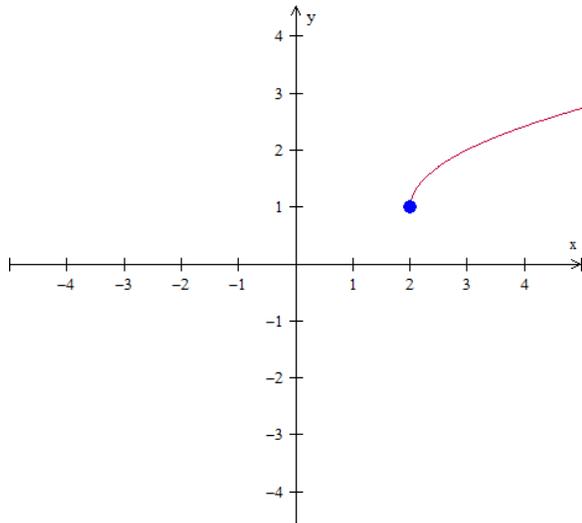
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In Problems 1-6, Use the graph to determine the intervals on which the function is increasing, decreasing, and constant

1.



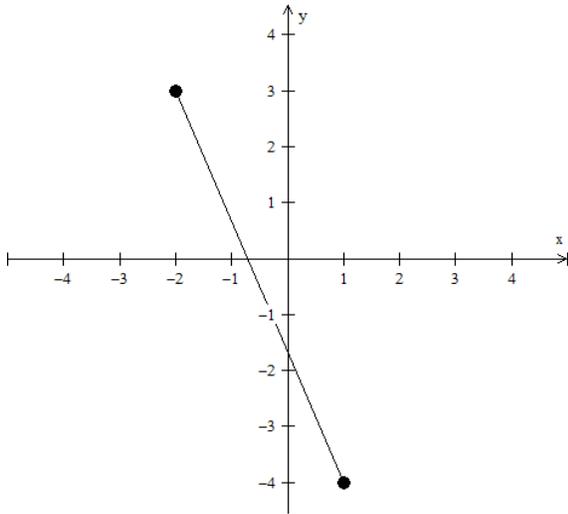
2.



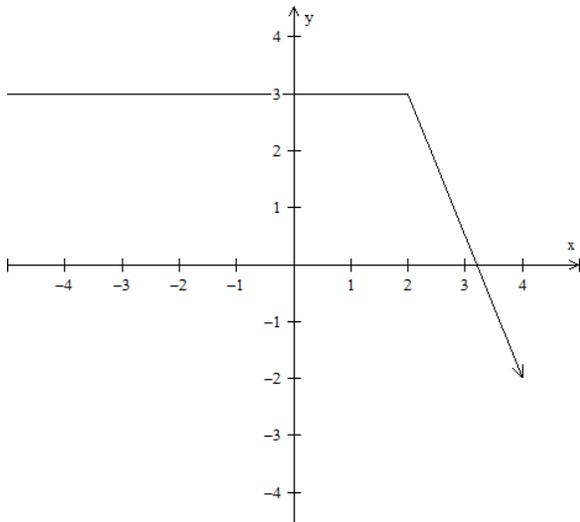
## Homework: Basics of Functions and Their Graphs

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3.



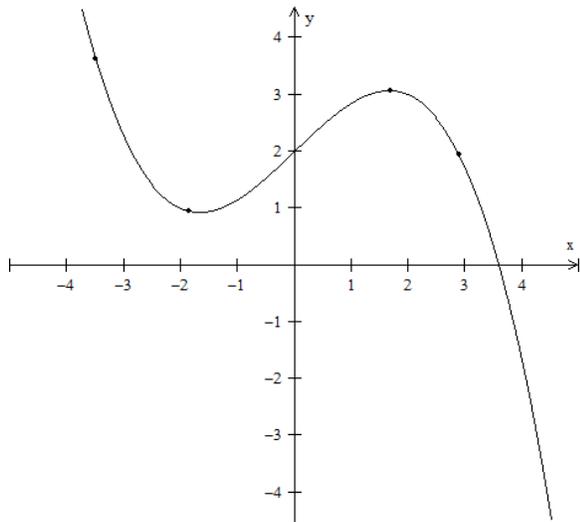
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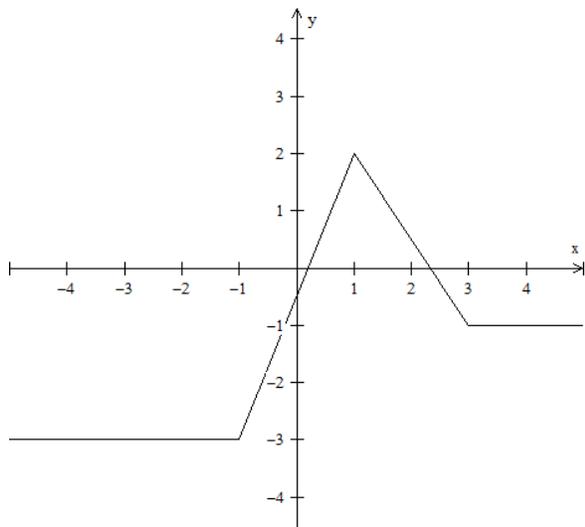
## Homework: Basics of Functions and Their Graphs

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5.



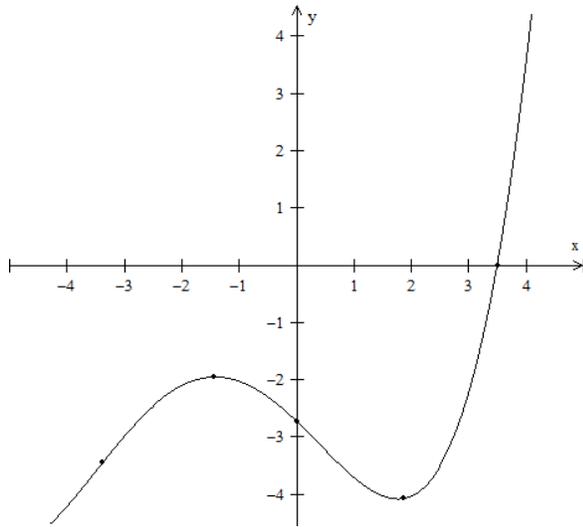
6.



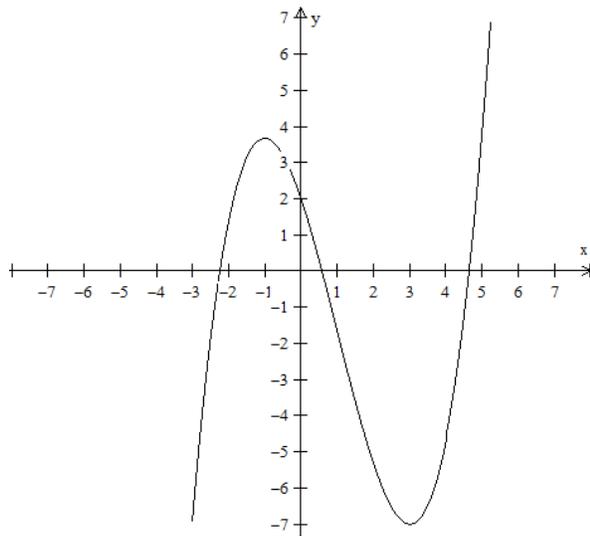
## Homework: Basics of Functions and Their Graphs

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

7.



8.



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

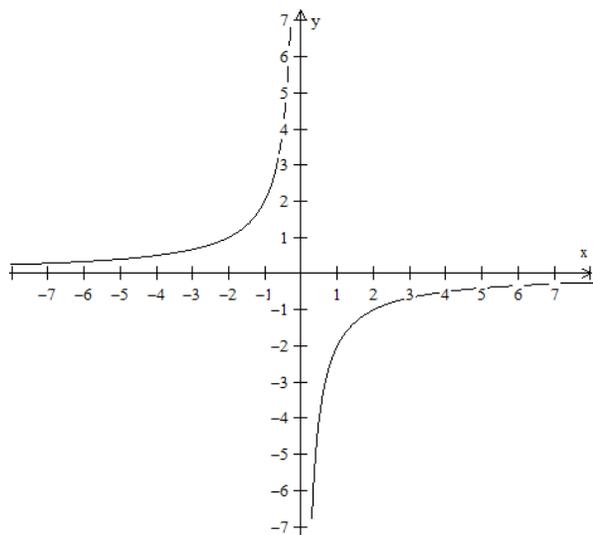
9. $f(x) = x^3 - 2x$	10. $f(x) = x^2 + 3x$
11. $f(x) = x^2 +  x $	12. $f(x) = x^6 - x^2 - 2$
13. $f(x) = (x + 2)^3$	14. $f(x) = x\sqrt{2 - x^4}$

## Homework: Basics of Functions and Their Graphs

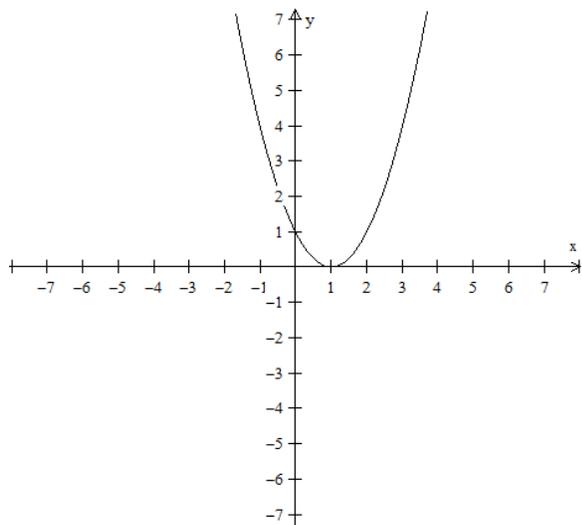
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In Problems 15-16, Determine if the graph is the graph of an even function, odd function, or neither.

15.



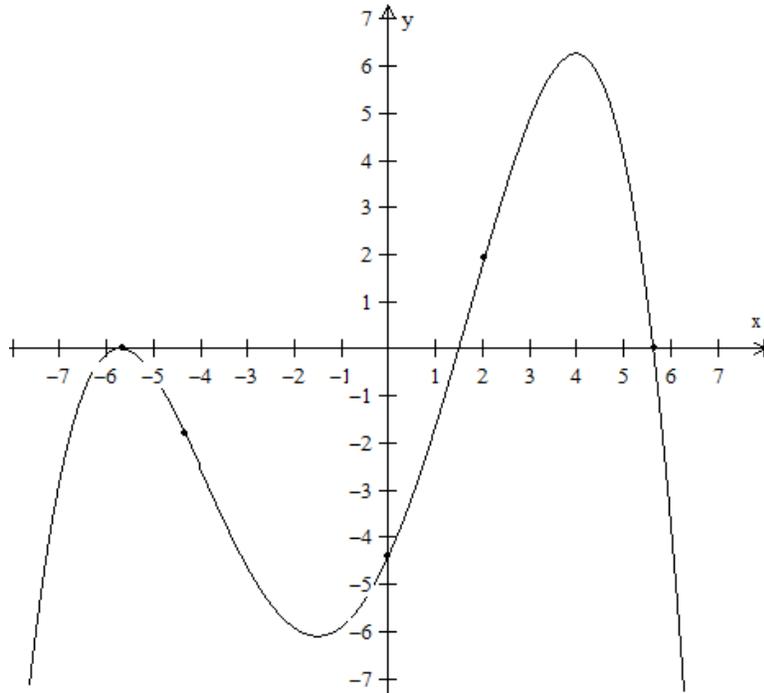
16.



## Homework: Basics of Functions and Their Graphs

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

17.

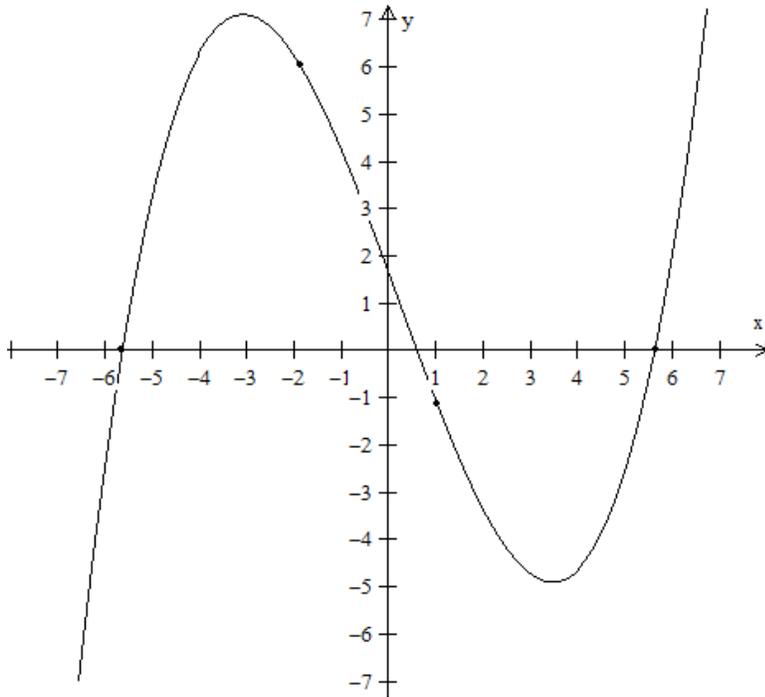


a) domain	b) range	c) x-intercept(s)
d) y-intercept	e) interval on which graph is increasing, decreasing, and constant	f) relative extrema
g) $f(1)$	h) the values of $x$ for which $f(x) = -6$ (estimate)	i) is the graph even, odd, or neither?

**Homework: Basics of Functions and Their Graphs**

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18.



a) domain	b) range	c) x-intercept(s)
d) y-intercept	e) interval on which graph is increasing, decreasing, and constant	f) relative extrema
g) $f(1)$	h) the values of $x$ for which $f(x) = -6$ (estimate)	i) is the graph even, odd, or neither?

### Homework: Basics of Functions and Their Graphs

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

19. $f(x) = \begin{cases} 4x-2 & \text{if } x < 0 \\ 8x-1 & \text{if } x \geq 0 \end{cases}$ a) $f(-3)$ b) $f(0)$ c) $f(5)$	20. $f(x) = \begin{cases} 7x+2 & \text{if } x < -2 \\ x^2-3 & \text{if } x \geq -2 \end{cases}$ a) $f(-4)$ b) $f(3)$ c) $f(-2)$
21. $f(x) = \begin{cases}  x -2x & \text{if } x < 3 \\ 4x+2 & \text{if } x \geq 3 \end{cases}$ a) $f(-2)$ b) $f(3)$ c) $f(10)$	

In Problems 22-27, graph each function

22. $f(x) = \begin{cases} -2x & \text{if } x < 0 \\ 2x+1 & \text{if } x \geq 0 \end{cases}$	23. $f(x) = \begin{cases} 3 & \text{if } x < 0 \\ x & \text{if } x \geq 0 \end{cases}$
24. $f(x) = \begin{cases} x-2 & \text{if } x < 2 \\ x+3 & \text{if } x \geq 2 \end{cases}$	25. $f(x) = \begin{cases} 5 & \text{if } x < 1 \\ -5 & \text{if } x \geq 1 \end{cases}$
26. $f(x) = \begin{cases} x^2 & \text{if } x < 1 \\ -x-3 & \text{if } x \geq 1 \end{cases}$	27. $f(x) = \begin{cases} 2 & \text{if } x < -1 \\ 3x & \text{if } -1 \leq x \leq 2 \\ -x & \text{if } x > 2 \end{cases}$