Review Rotation

1. Find a buddy.
2. Move around to each of the 4 stations.

Buddy A – complete the odd #s.

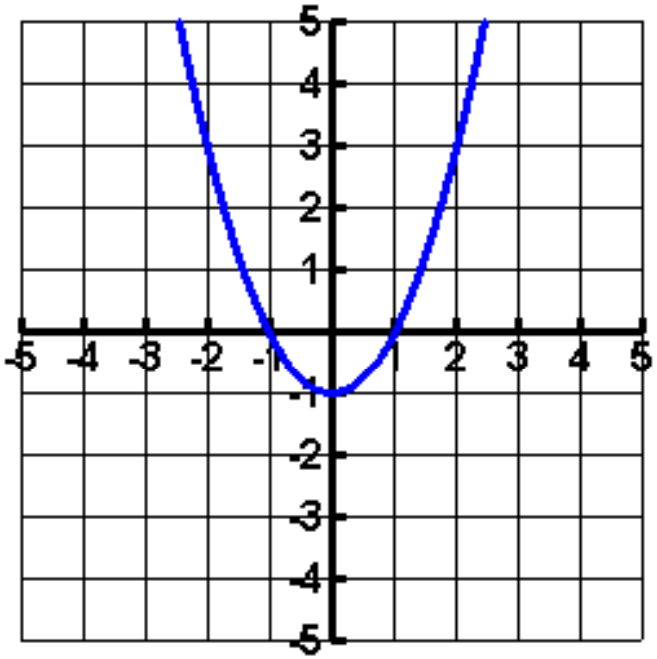
Buddy B – complete the even #s.

Check each other's work!!

Adapted from Various Sources

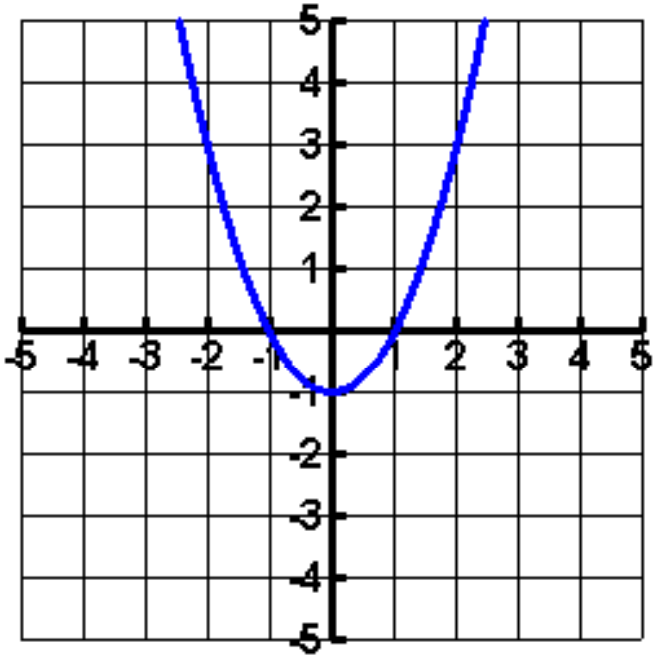
(MCC9-12.A.APR.1; MCC9-12.A.APR.3; MCC9-12.F.IF.7; MCC9-12.F.IF.7c; MCC9-12.A.REI.2)

Directions: Use the graph to analyze the function.



1. Domain: _____
2. Range: _____
3. Vertex: _____
4. Increasing: _____
5. Decreasing: _____
6. X-intercepts: _____
7. Y-intercept: _____
8. End behavior: _____
9. Minimum: _____
10. Maximum: _____

Directions: Use the graph to analyze the function.



1. Domain: $(-\infty, \infty)$
2. Range: $[-1, \infty)$
3. Vertex: $(0, -1)$
4. Increasing: $[0, \infty)$
5. Decreasing: $(-\infty, 0]$
6. X-intercepts: $(-1, 0)$ & $(1, 0)$
7. Y-intercept: $(0, -1)$
8. End behavior: Rises on left & right
9. Minimum: $(0, -1)$
10. Maximum: none

Directions: Given the transformation, write the equation.

11. Transform the equation $f(x) = x^2$ so that the graph is shifted to the right 5 units and shifted down 8 units:

12. Transform the equation $f(x) = \sqrt{x}$ so that the graph is reflected across the x-axis and shifted to the left 3 units:

13. Transform the equation $f(x) = |x|$ so that the graph is shifted to the right 1 unit, shifted down 2 units, and vertically stretched by a factor of 3:

14. Transform the equation $f(x) = x^3$ so that the graph is reflected across the x-axis, shifted up 11 units, and shifted to the left 6 units:

Directions: Given the transformation, write the equation.

11. Transform the equation $f(x) = x^2$ so that the graph is shifted to the right 5 units and shifted down 8 units:

$$g(x) = (x-5)^2 - 8$$

12. Transform the equation $f(x) = \sqrt{x}$ so that the graph is reflected across the x-axis and shifted to the left 3 units:

$$g(x) = -\sqrt{x+3}$$

13. Transform the equation $f(x) = |x|$ so that the graph is shifted to the right 1 unit, shifted down 2 units, and vertically stretched by a factor of 3:

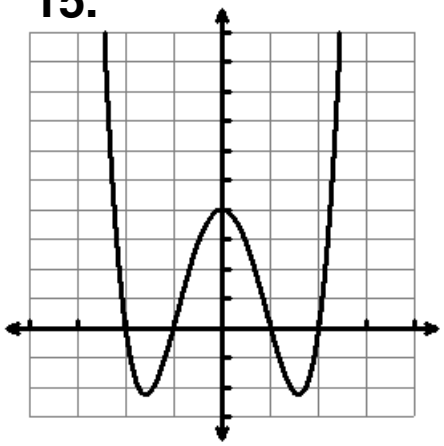
$$g(x) = 3|x-1| - 2$$

14. Transform the equation $f(x) = x^3$ so that the graph is reflected across the x-axis, shifted up 11 units, and shifted to the left 6 units:

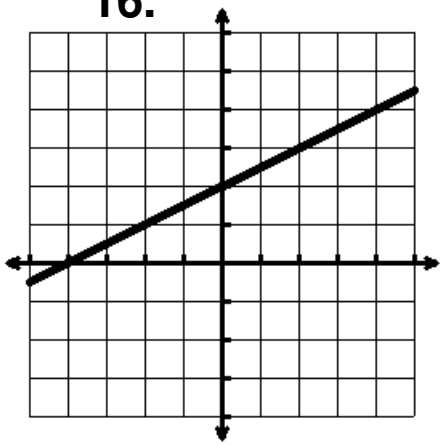
$$g(x) = -(x+6)^3 + 11$$

Directions: Tell whether it is even, odd, or neither by examining the graphs.

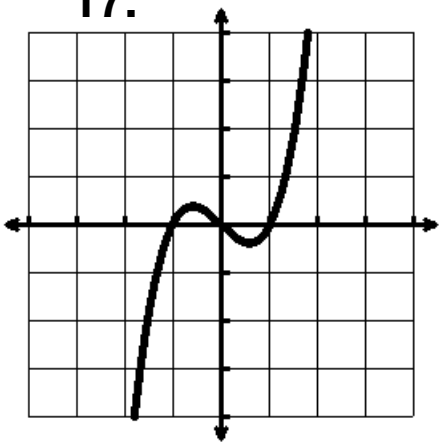
15.



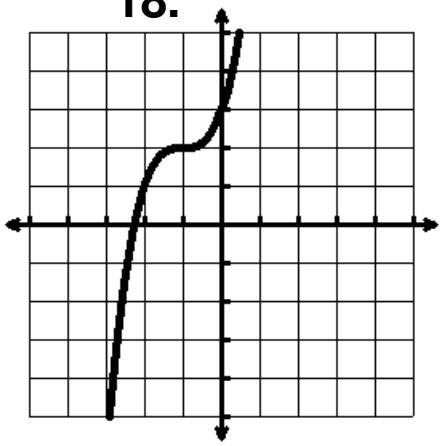
16.



17.



18.



Directions: Tell whether it is even, odd, or neither by examining the equations.

19. $f(x) = 2x^2 - 4$

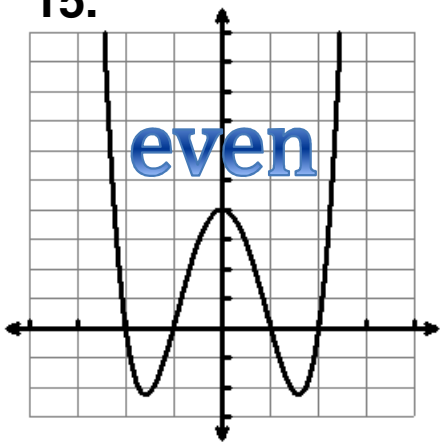
20. $f(x) = 4x^2 + 3x - 1$

21. $f(x) = x^3 - 2x + 1$

22. $f(x) = x^3 - x$

Directions: Tell whether it is even, odd, or neither by examining the graphs.

15.



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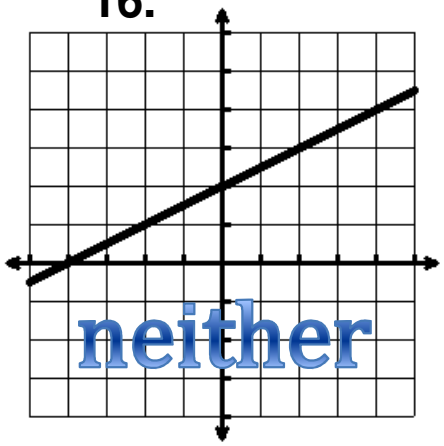
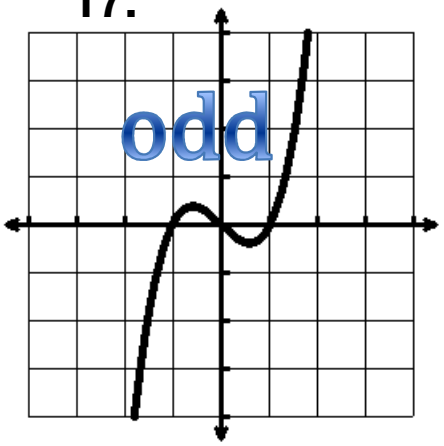
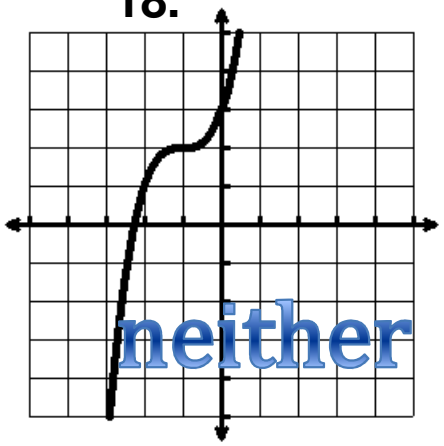


17.



18.



Directions: Tell whether it is even, odd, or neither by examining the equations.

19. $f(x)=2x^2-4$

even

20. $f(x)=4x^2+3x-1$

neither

21. $f(x)=x^3-2x+1$

neither

22. $f(x)=x^3-x$

odd

Directions: Factor completely.

23. $x^2 - 2x - 24$
24. $x^2 - 49$
25. $2x^2 - 14x + 20$
26. $3x^2 - 48$
27. $4x^2 - 12x + 36$
28. $x^2 + 15x + 50$

Directions: Factor completely.

23. $x^2 - 2x - 24$ $(x-6)(x+4)$
24. $x^2 - 49$ $(x-7)(x+7)$
25. $2x^2 - 14x + 20$ $2(x-5)(x-2)$
26. $3x^2 - 48$ $3(x-4)(x+4)$
27. $4x^2 - 12x + 36$ Not factorable
28. $x^2 + 15x + 50$ $(x+10)(x+5)$

Directions: Simplify the following expressions.

29. $(4x^3 + 3x^2 - 7x) + (7x^2 + 2x - 10)$

30. $(x^2 + 4x^3 - 7x - 5) - (3x^2 - 4 - 4x + 6x^3)$

31. $(3x + 5)(2x - 7)$

32. $(2x - 3)^2$

Directions: Simplify the following expressions.

29. $(4x^3 + 3x^2 - 7x) + (7x^2 + 2x - 10)$

$4x^3 + 10x^2 - 5x - 10$

30. $(x^2 + 4x^3 - 7x - 5) - (3x^2 - 4 - 4x + 6x^3)$

$-2x^3 - 2x^2 - 3x - 1$

31. $(3x + 5)(2x - 7)$

$6x^2 - 11x - 35$

32. $(2x - 3)^2$

$4x^2 - 12x + 9$

Directions: Solve for x.

33. $x^2 + 5x + 6 = 0$

33. $x^2 - 3x - 10 = 0$

33. $x^3 + 2x^2 - 8x = 0$

34. $x^2 - 10x + 24 = 0$

Directions: Solve for x.

33. $x^2 + 5x + 6 = 0$

$(x+3)(x+2) = 0$

$x = -3 \quad x = -2$

33. $x^2 - 3x - 10 = 0$

$(x-5)(x+2) = 0$

$x = 5 \quad x = -2$

33. $x^3 + 2x^2 - 8x = 0$

$x(x+4)(x-2) = 0$

$x = 0 \quad x = -4 \quad x = 2$

34. $x^2 - 10x + 24 = 0$

$(x-12)(x+2) = 0$

$x = 12 \quad x = -2$

Directions: Solve for x.

35. $4\sqrt{x} + 16 = 8$

36. $3\sqrt{x} - 2 + 5 = 11$

37. $2\sqrt{x-3} + 6 = 12$

38. $2\sqrt{x} - 24 = 0$

Directions: Solve for x.

35. $4\sqrt{x} + 16 = 8$

x = 4

36. $3\sqrt{x} - 2 + 5 = 11$

x = -64/9

37. $2\sqrt{x-3} + 6 = 12$

x = 12

38. $2\sqrt{x} - 24 = 0$

x = 144

Directions: Solve for x.

39. $\frac{x}{6} - \frac{2}{3x} = \frac{1}{2}$

40. $\frac{8}{x+3} = \frac{x+1}{x}$

41. $\frac{x}{4} - \frac{2}{x} = \frac{1}{2}$

42. $\frac{6}{x+2} = \frac{x+1}{x}$

43. $\frac{4}{x+1} = \frac{3}{x+2}$

44. $\frac{4}{x-2} + \frac{2}{3} = \frac{6}{x-2}$

Directions: Solve for x.

39. $\frac{x}{6} - \frac{2}{3x} = \frac{1}{2}$

x = -1 x = 4

40. $\frac{8}{x+3} = \frac{x+1}{x}$

x = 1 x = 3

41. $\frac{x}{4} - \frac{2}{x} = \frac{1}{2}$

x = -2 x = 4

42. $\frac{6}{x+2} = \frac{x+1}{x}$

x = 1 x = 2

43. $\frac{4}{x+1} = \frac{3}{x+2}$

x = -5

44. $\frac{4}{x-2} + \frac{2}{3} = \frac{6}{x-2}$

x = 5