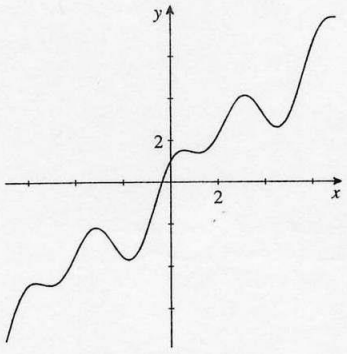
1) Recognizing Transformations

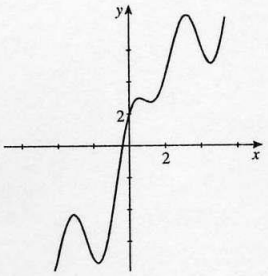
This is a graph of the function $f(x)$:



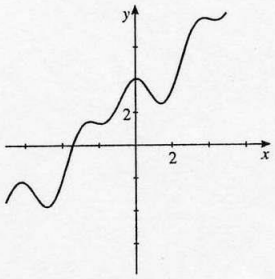
Give each graph below the correct label from the following:

(a) $f(x+3)$ (b) $f(x-3)$ (c) $f(2x)$ (d) $2f(x)$ (e) $|f(x)|$

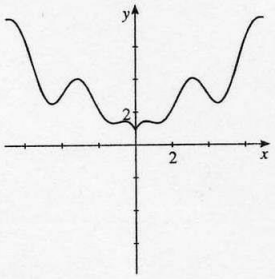
(f) $f(|x|)$ (g) $2f(x)-1$ (h) $f(2x)+2$ (i) $f(x)-x$ (j) $1/f(x)$



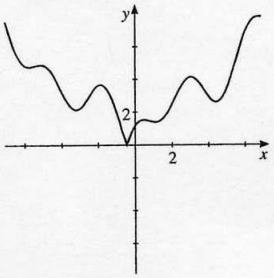
Graph 1



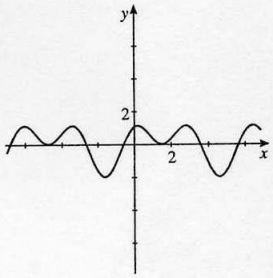
Graph 2



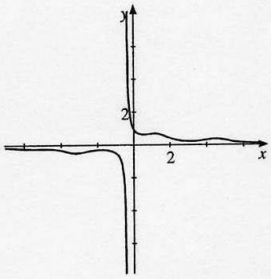
Graph 3



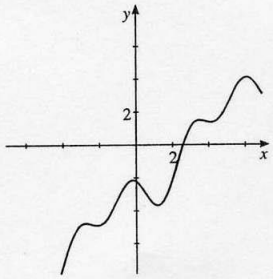
Graph 4



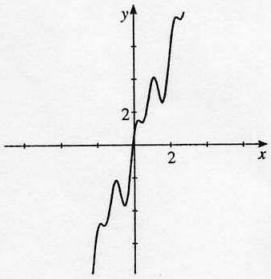
Graph 5



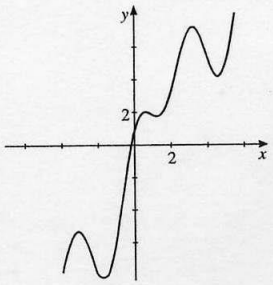
Graph 6



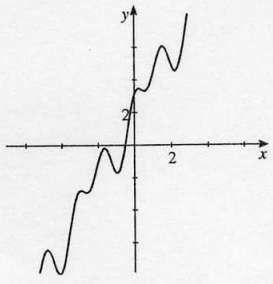
Graph 7



Graph 8



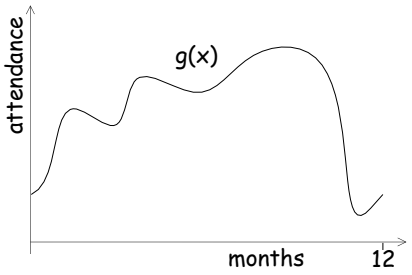
Graph 9



Graph 10

over

2) Suppose g(t) represents the attendance at a park during the course of 12 months. t = months. Assume the attendance figures are the same <u>year after year</u>.



(a) Should g(t) = g(t + 12)? Justify your answer.

(b) Suppose g(t) were equal to g(t + 1). What would that say about attendance?

3) Let $p(x) = -x^2$.

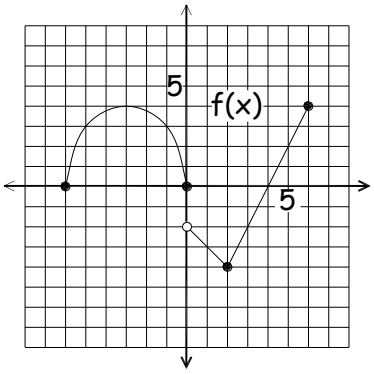
(a) What is the equation of the same parabola shifted so that the vertex is now at (7, 5)?

(b) What are the roots of that shifted parabola?

(c) What is the y-intercept of that shifted parabola?

4) Let $c(x) = (x - n)^3$ for n = 0, 1, 2, 3… Sketch the family of such cubics.

5) Sketch f(x + 2) + 4



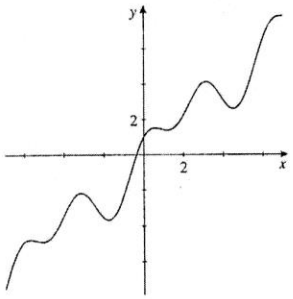
6) Let $k(x) = \begin{cases} x(x+6), -6 \le x < 0 \\ x, x \ge 0 \end{cases}$ Sketch y = k(x – 3) + 9

7) Let f(x) = | x |, -5 ≤ x ≤ 5. Graph (a) f(2x - 5) (b) f(2(x – 5))

Mth 111 Transforms Activity Name KEY

1) Recognizing Transformations

This is a graph of the function $f(x)$:



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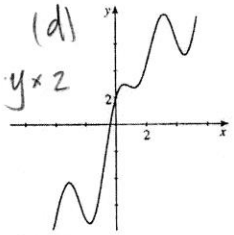
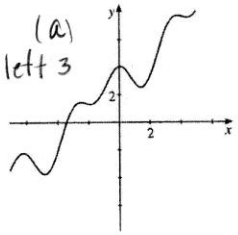


Graph 1



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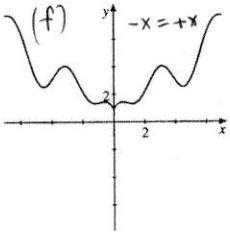

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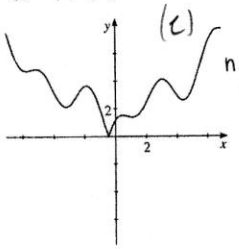
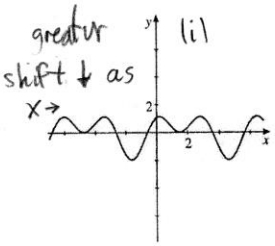


Graph 4



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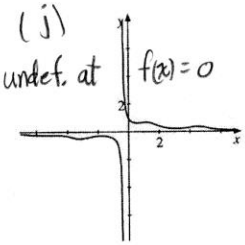
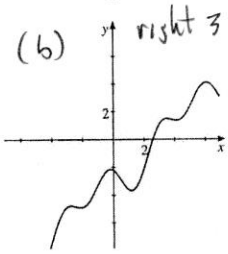
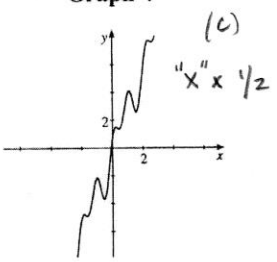


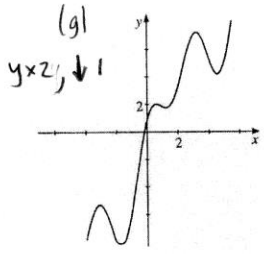
Graph 6



Graph 7



Graph 8



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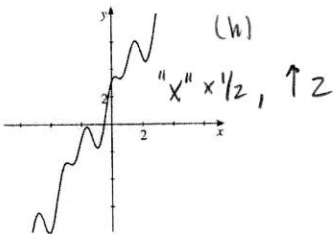

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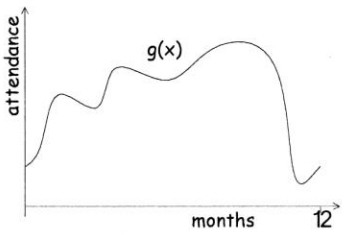


(a) Should g(t) = g(t + 12)? Justify your answer. Yes

Each year (12 mo) is the same

(b) Suppose g(t) were equal to g(t + 1). What would that say about attendance?

Each month is the same

3) Let $p(x) = -x^2$.

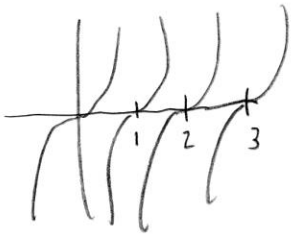
(a) What is the equation of the same parabola shifted so that the vertex is now at (7, 5)?

$y = -(x-7)^2 + 5$

(b) What are the roots of that shifted parabola? $y=0 \quad x = 7 \pm \sqrt{5}$

(c) What is the y-intercept of that shifted parabola? $y(0) = -44$

4) Let $c(x) = (x - n)^3$ for n = 0, 1, 2, 3... Sketch the family of such cubics.



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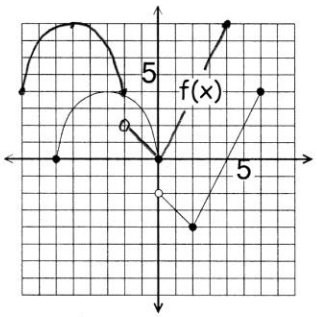

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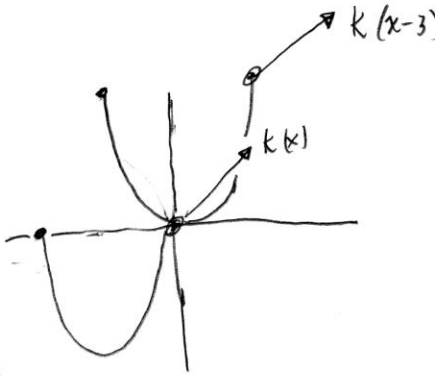
→ 3, ↑ 9



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