Name: Key

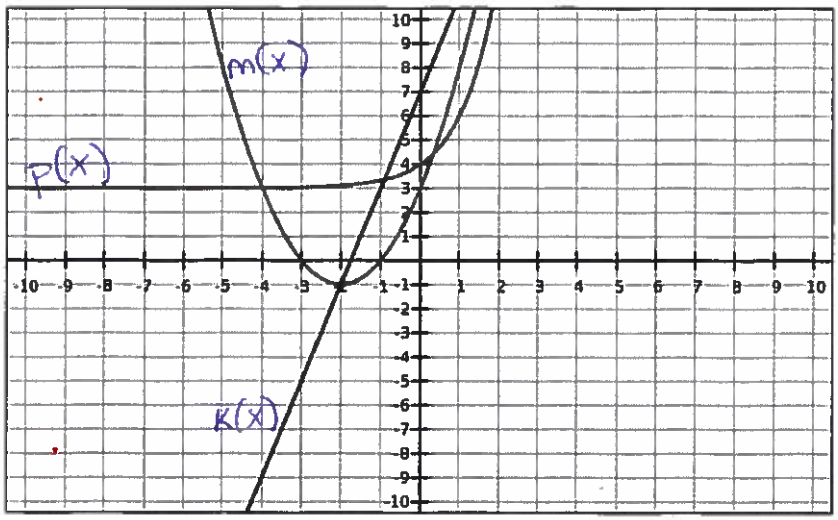
Unit 6 Part 2 Review

Use the equations and graph below to answer 1-5:

$p(x) = 3^x + 3$

$k(x) = 4x + 7$

$m(x) = (x+2)^2 - 1$



1) Label the three graphs given the functions above

2) What is the value of $p(0)$?

4

3) What is the value of $k(0)$?

7

4) What is the value of $m(0)$?

3

5) Which function would have the smallest output when $x = -50$?

$k(x)$

6) Which function would have the largest output when $x = 50$?

$p(x)$

7) Solve by completing the square:

$\frac{4x^2}{4} - \frac{64}{4}\frac{x}{4} + \frac{32}{4} = \frac{0}{4}$

$x^2 - 16x + 8 = 0$

$x^2 - 16x + 64 = -8 + 64$

$(x-8)^2 = 56$

$x - 8 = \pm 2\sqrt{14}$

$+8 \quad +8$

$x = 8 \pm 2\sqrt{14}$

8) Find the roots using the quadratic formula:

$18x^2 - 9x + 2.625 = 0$

$\frac{-(-9) \pm \sqrt{(-9)^2 - 4(18)(2.625)}}{2(18)}$

$\frac{9 \pm \sqrt{81 + 189}}{36}$

$\frac{9 \pm \sqrt{270}}{36}$

$\frac{9 \pm 3\sqrt{30}}{36}$

$\frac{3 \pm \sqrt{30}}{12}$

9) Determine the number of x-intercepts of $j(x) = x^2 - 12x + 20$, then convert the function to vertex form.

$b^2 - 4ac$

$(-12)^2 - 4(1)(20)$

$144 - 80$

64 → 2 solutions

$j(x) = [x^2 - 12x + 36] - 36 + 20$

$\frac{-12}{2}$

$(-6)^2$

36

$j(x) = (x-6)^2 - 16$