Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Hour:\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_

**Passport to Advanced Mathematics Test Review**

 **-No Calculator 2016-2017**

1) The functions f and g, defined by f(x) = 2x2 – 18 and g(x) = -2x2 + 18 are graphed in the

 xy-plane below. The graphs of f and g intersect at the points (k,0) and (-k,0). What is

 the value of k?

2) 9x2 – 25 = (hx + k)(hx – k)

In the equation above, h and k are constants. What are the value for h and k?

3) If f(x) = -5x + 4, then what is f(-2x)?

4) The table below shows some values of the functions f and g. For which value of x

 is f(x) – g(x) = x?

|  |  |  |
| --- | --- | --- |
| x | f(x) | g(x) |
| 0 | -5 | 0 |
| 1 | -3 | -4 |
| 2 | -1 | 0 |
| 3 | -3 | -4 |
| 4 | -5 | -16 |

5) What are the solutions to the quadratic equation 3x2 – 15x + 18 = 0?

6) Write an expression that is equivalent to 4(2x + 3)(3x+1)

7) In the equation below, k is a constant. If x = 4, what is the value of k?

$\sqrt{k+5 }$- x = 0

8) y = -25x2 + bx + 13. Rewrite the following equation for b in terms of x and y.

9) The surface area of a cube is $6(\frac{x}{9})^{2}$, where x is a positive constant. What is the

 perimeter of one face of the cube?

10) If the expression below is rewritten in the form a + bi, where a and b are real numbers, what is the value of a?

$$\frac{8-i}{1-2i}$$