Pre-AP Precalculus

CR 1 – SAT PREP 5

*** NO CALCULATOR***

1] A line in the xy-plane passes through the origin and has a slope of $\frac{1}{7}$. Which of the following points lies on the line?

A) $(0,7)$

B) $(1,7)$

C) $(7,7)$

D) $(14,2)$

2]

Which of the following equations has a graph in the xy-plane for which y is always greater than or equal to -1 ?

A) $y = |x| - 2$

B) $y = x^2 - 2$

C) $y = (x-2)^2$

D) $y = x^3 - 2$

3] $(x^2y - 3y^2 + 5xy^2) - (-x^2y + 3xy^2 - 3y^2)$

Which of the following is equivalent to the expression above?

A) $4x^2y^2$

B) $8xy^2 - 6y^2$

C) $2x^2y + 2xy^2$

D) $2x^2y + 8xy^2 - 6y^2$

4] The graph of a line in the xy-plane has slope 2 and contains the point $(1,8)$. The graph of a second line passes through the points $(1,2)$ and $(2,1)$. If the two lines intersect at the point (a,b), what is the value of $a+b$?

A) 4

B) 3

C) -1

D) -4

5] If $\frac{x^{a^2}}{x^{b^2}} = x^{16}$, $x > 1$, and $a + b = 2$, what is the value of $a - b$?

A) 8
B) 14
C) 16
D) 18

6] On Saturday afternoon, Armand sent m text messages each hour for 5 hours, and Tyrone sent p text messages each hour for 4 hours. Which of the following represents the total number of messages sent by Armand and Tyrone on Saturday afternoon?

A) $9mp$
B) $20mp$
C) $5m + 4p$
D) $4m + 5p$

7] If $(ax + 2)(bx + 7) = 15x^2 + cx + 14$ for all values of x, and $a + b = 8$, what are the two possible values for c ?

A) 3 and 5
B) 6 and 35
C) 10 and 21
D) 31 and 41

8]
$$ax + by = 12$$
$$2x + 8y = 60$$

In the system of equations above, a and b are constants. If the system has infinitely many solutions, what is the value of $\frac{a}{b}$?

9] $2x(3x + 5) + 3(3x + 5) = ax^2 + bx + c$

In the equation above, a, b, and c are constants. If the equation is true for all values of x, what is the value of b ?

10] What is the sum of all values of m that satisfy $2m^2 - 16m + 8 = 0$?

A) -8
B) $-4\sqrt{3}$
C) $4\sqrt{3}$
D) 8