Pre-AP Precalculus

CR 3 – SAT PREP 7

NO CALCULATOR

1] $$\frac{8-i}{3-2i}$$

If the expression above is rewritten in the form $a+bi$, where a and b are real numbers, what is the value of a ? (Note: $i=\sqrt{-1}$)

A) 2

B) $\frac{8}{3}$

C) 3

D) $\frac{11}{3}$

2] The line $y=kx+4$, where k is a constant, is graphed in the xy-plane. If the line contains the point (c,d), where $c\neq 0$ and $d\neq 0$, what is the slope of the line in terms of c and d ?

A) $\frac{d-4}{c}$

B) $\frac{c-4}{d}$

C) $\frac{4-d}{c}$

D) $\frac{4-c}{d}$

3] $$f(x)=\frac{3}{2}x+b$$

In the function above, b is a constant. If $f(6)=7$, what is the value of $f(-2)$?

A) -5

B) -2

C) 1

D) 7

4] If $\frac{a-b}{b}=\frac{3}{7}$, which of the following must also be true?

A) $\frac{a}{b}=-\frac{4}{7}$

B) $\frac{a}{b}=\frac{10}{7}$

C) $\frac{a+b}{b}=\frac{10}{7}$

D) $\frac{a-2b}{b}=-\frac{11}{7}$

5]

$$\frac{x}{y} = 6$$
$$4(y+1) = x$$

If $(x,\ y)$ is the solution to the system of equations above, what is the value of y ?

A) 2

B) 4

C) 12

D) 24

6] Ken and Paul each ordered a sandwich at a restaurant. The price of Ken's sandwich was x dollars, and the price of Paul's sandwich was \$1 more than the price of Ken's sandwich. If Ken and Paul split the cost of the sandwiches evenly and each paid a 20% tip, which of the following expressions represents the amount, in dollars, each of them paid? (Assume there is no sales tax.)

A) $0.2x + 0.2$

B) $0.5x + 0.1$

C) $1.2x + 0.6$

D) $2.4x + 1.2$

7] $$\sqrt{x-a} = x-4$$

If $a = 2$, what is the solution set of the equation above?

A) $\{3, 6\}$

B) $\{2\}$

C) $\{3\}$

D) $\{6\}$

8] If $\frac{7}{9}x - \frac{4}{9}x = \frac{1}{4} + \frac{5}{12}$, what is the value of x ?

9] If $f(x) = -2x + 5$, what is $f(-3x)$ equal to?

A) $-6x - 5$

B) $6x + 5$

C) $6x - 5$

D) $6x^2 - 15x$

10] While preparing to run a marathon, Amelia created a training schedule in which the distance of her longest run every week increased by a constant amount. If Amelia's training schedule requires that her longest run in week 4 is a distance of 8 miles and her longest run in week 16 is a distance of 26 miles, which of the following best describes how the distance Amelia runs changes between week 4 and week 16 of her training schedule?

A) Amelia increases the distance of her longest run by 0.5 miles each week.

B) Amelia increases the distance of her longest run by 2 miles each week.

C) Amelia increases the distance of her longest run by 2 miles every 3 weeks.

D) Amelia increases the distance of her longest run by 1.5 miles each week.