

Date: _____

Instructors: Peter Curley, Channing Hodgkins, Jared Lyons

Student Name/ID#: _____

Total Score:

/ 100

ARCHBISHOP WILLIAMS HIGH SCHOOL - AWHS SUMMER MATH ASSIGNMENTS: SECTION 1

Students Entering TRIG AND FUNCTIONS Summer Assignment

QUESTION 1

 /1**Topic Resource: Solving Linear Equations****Solve the equation:**

$$-\frac{1}{4}x = -8$$

QUESTION 2

 /1**Topic Resource: Solving Linear Equations****Solve the equation:**

$$-\frac{1}{3}x + 7 = -5$$

QUESTION 3

 /1

Topic Resource: Solving Linear Equations**Solve the equation:**

$$6x - 2(x - 1) = -14$$

QUESTION 4

 /1**Topic Resource: Solving Linear Equations****Solve the equation:**

$$\frac{3}{4}(8x - 4) = -3 + 6x$$

QUESTION 5

 /1**Topic Resource: Relations and Functions****Which of the following relations are functions? (Choose all that apply)**A $\{(0, 4), (1, 5), (2, 6), (3, 7)\}$ B $\{(-1, 2), (-2, 5), (-2, 7)\}$ C $\{(2, 8), (3, 12), (4, 16)\}$ D $\{(1, 2), (2, 2), (3, 2), (4, 2)\}$

QUESTION 6

 /1

Topic Resource: Writing Functions

Write a linear equation for the following function:

$\{(1, -2), (2, -1), (4, 1), (5, 2)\}$

QUESTION 7

/2

Topic Resource: Identifying Functions

Mark claims that this graph is a function. Is he correct? How do you know?



QUESTION 8

/1

Topic Resource: Evaluating Functions

Evaluate the function for the given value of x .

$$f(x) = 3x - 12$$

a) $f(3)$

b) $f(-5)$

c) $f(a - 1)$

QUESTION 9

 /1**Topic Resource: Writing and Solving Linear Equations**

A city park is opening a new swimming pool. You can pay a daily entrance fee of \$3, or purchase a membership fee for the 12-week summer season of \$82 and pay only \$1 per day to swim. How many days would you have to swim to make the membership worthwhile?

QUESTION 10

 /2

Topic Resource: Classifying Numbers

Describe the relationship among these sets of numbers: natural numbers, whole numbers, integers, rational number, irrational numbers, and real numbers.

QUESTION 11

 /1
Topic Resource: Writing Linear Equations

Write an equation in slope-intercept form for the line passing through the points $(-4, 16)$ and $(3, -5)$.

QUESTION 12

 /1
Topic Resource: Domain and Range

Determine the domain and range of the relation.

$\{(3, -9), (11, 21), (121, 34), (34, 1), (23, 45)\}$

A $D: \{3, 11, 23, 34, 121\}, R: \{-9, 1, 21, 34, 45\}$

C $D: \{3, 121\}, R: \{-9, 45\}$ D $D: \{118\}, R: \{54\}$

 /2

QUESTION 13

Topic Resource: Transformations of Functions

Describe the differences between the graphs of $y = (x + 6)^2$ and $y = (x - 6)^2 + 7$.

QUESTION 14

 /1

Topic Resource: Quadratic Functions

The graph of a quadratic function has vertex $(-3, -2)$. What is the axis of symmetry?

- A $x = 3$ B $x = -3$
C $y = -2$ D $y = 2$

QUESTION 15

 /2

Topic Resource: Solving Systems of Linear Equations

Courtney has 43 coins consisting of dimes and quarters. The total values of her coins is \$6.25. How many of each type of coin does she have?

QUESTION 16

 /1**Topic Resource: Function Decomposition**

Which is the composition, $f(g(x))$, if $f(x) = -x - 3$, and $g(x) = 7 + 5x$?

A $f(g(x)) = 4x + 4$

B $f(g(x)) = -5x - 8$

C $f(g(x)) = -5x - 10$

D $f(g(x)) = 4x - 10$

QUESTION 17

 /1**Topic Resource: Multiplying Polynomials**

How can you write $(m - 5)(m + 4) + 8$ as a product of two binomials?

A $(m + 8)(m + 8)$

B $(m - 5)(8m + 32)$

C $(m - 4)(m + 3)$

D $(m - 1)(m + 8)$

QUESTION 18

 /1**Topic Resource: Solving Quadratic Equations**

What are the solutions to $x^2 - 3x - 54 = 0$?

A 6, -9

B 6, 9

C -3, 18

D -6, 9

QUESTION 19

 /1**Topic Resource: Factoring Polynomials**

Factor the expression $16x^2 - 1$.

QUESTION 20

 /1**Topic Resource: Evaluating Expressions**Evaluate the expression $3(4)^x + 11$ when $x = 3$.

QUESTION 21

 /1**Topic Resource: Writing Expressions**What is an algebraic expression for 2 less than the product of 3 and a number x ?

A $3x - 2$

B $3 - 2x$

C $(3 - 2)x$

D $2 - 3x$

QUESTION 22

 /1**Topic Resource: Solving Word Problems**A shirt is on sale for \$25 at the local department store. The sales tax equals $\frac{1}{25}$ of the shirt's price. What is the total cost of the shirt including sales tax?

QUESTION 23

 /1

Topic Resource: Classifying Numbers

Name the subset(s) of the real numbers to which the number $\sqrt{11}$ belongs.

A rational numbers

B irrational numbers

C integers, rational numbers

D natural numbers, whole numbers,
integers, rational numbers

QUESTION 24

 /1**Topic Resource: Multiplying Polynomials**

What is the simplified form of the expression $2(7c - 1)$?

QUESTION 25

 /1**Topic Resource: Solving Linear Equations**

What is the solution of the equation

$$4x + 7 = 9x + 2?$$

QUESTION 26

 /2

Topic Resource: Solving Linear Equations

State whether this problem was done correctly or not. If not, explain the error.

$$5(1 + 4h) + 2h = 27$$

$$5 + 20h + 2h = 27$$

$$27h = 27$$

$$\frac{27h}{27} = \frac{27}{27}$$

$$h = 1$$

QUESTION 27

 /2**Topic Resource: Finding Intercepts of a Linear Equation**

Find the intercepts of the line:

$$5x + 7y = 14$$

QUESTION 28

 /2

Topic Resource: Solving Inequalities

Who is correct? Identify the mistake made in the incorrect response.

Taro

$$6d \geq -84$$

$$\frac{6d}{6} \geq \frac{-84}{6}$$

$$d \geq -14$$

Jamie

$$6d \geq -84$$

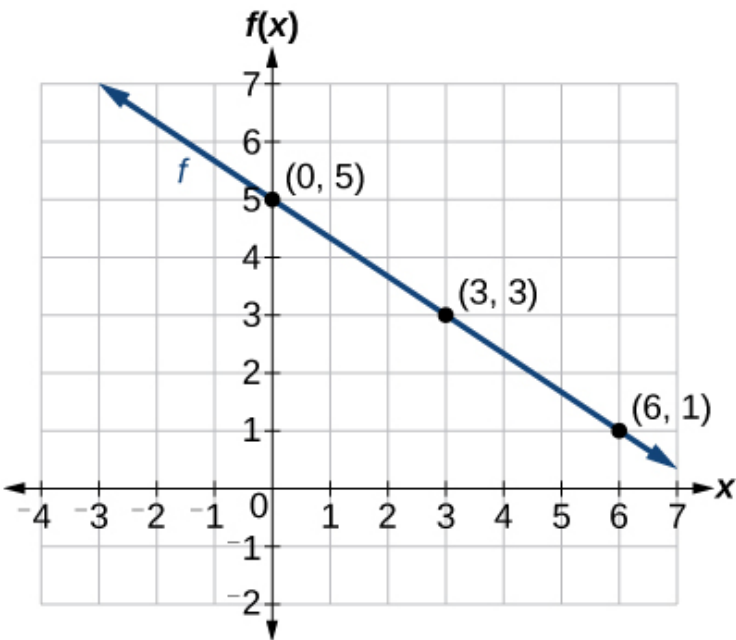
$$\frac{6d}{6} \leq \frac{-84}{6}$$

$$d \leq -14$$

QUESTION 29

 /2
Topic Resource: Writing Linear Equations

Write the equation of this line in slope-intercept form.



QUESTION 30

 /1

Topic Resource: Exponent Properties

What is the simplified form of $6(-6)^{-1}$?