

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 ALGEBRA 2 (All levels) - Summer Assignment Submissions Disabled Preview

INSTRUCTIONS: This assignment is to help prepare you for Algebra 2 by helping you recall key, foundation topics. Answer all questions. SHOW ALL SUPPORTING WORK as required by the problem. Do your own work.

QUESTION 1 /1**Topic Resource: Order of Operations****Evaluate the expression. Be sure to remember order of operations.**

$$(5 + 16) \div 7 - 2$$

QUESTION 2 /1**Topic Resource: Order of Operations****Evaluate the expression. Be sure to remember order of operations.**

$$(10 + 2 - 2) \times 6 - 1$$

QUESTION 3 /1

Topic Resource: Rational Numbers

Evaluate the expression.

$$(-16) - 6 + (-5) \underline{\hspace{10em}}$$

QUESTION 4

 /1**Topic Resource: Rational Numbers**

Evaluate the expression.

$$\left(-\frac{1}{5}\right) + \frac{7}{4}$$

QUESTION 5

 /1**Topic Resource: Simplifying Expressions**

Simplify the expression.

$$12r + 5 + 3r - 5$$

QUESTION 6

 /1

Topic Resource: Simplifying Expressions**Simplify the expression.**

$$-10(1 - 9x) + 6(x - 10)$$

QUESTION 7

 /1**Topic Resource: Simplifying Expressions****Simplify the expression.**

$$(12a^5 - 6a - 10a^3) - (10a - 2a^5 - 14a^4)$$

QUESTION 8

 /1**Topic Resource: Comparing Fractions****List the following fractions from least to greatest.**

$$\equiv \frac{5}{6} \equiv \frac{1}{2} \equiv 3\frac{7}{10} \equiv \frac{8}{9} \equiv \frac{1}{12}$$

QUESTION 9

 /2

Topic Resource: Slope

When finding the slope of $y = 2 - 5x$, Christine and Meg get different answers. Christine says the slope is 2, but Meg says the slope is -5.

1. Type the name of the person with the correct slope.
2. How do you know that person had the correct answer? Explain.

QUESTION 10

 /2
Topic Resource: Slope

A student uses the points $(-2, 6)$ and $(-4, 3)$ to calculate the slope and use it to find the slope of a line parallel to it.

1. Explain the error the student made
2. Find the correct slope of a line parallel to that which contains $(-2, 6)$ and $(-4, 3)$

The slope of the line through $(-2, 6)$ and $(-4, 3)$ is:

$$m = \frac{6-3}{-2+4} = \frac{3}{2}$$

The slope of the parallel line is:

$$m = -\frac{2}{3}$$



QUESTION 11

 /2

Topic Resource: Graphing Inequalities

Emily and Erin were graphing the inequality $x < 8$. Emily graphed it with an open circle, but Erin graphed it with a closed circle.

1. Type the name of the person with the correct graph.
2. How do you know that person had the correct answer? Explain.

QUESTION 12

 /1**Topic Resource: Evaluating Expressions**

Find the value of $2x^2 + x + 3$ when $x = 3$

A 24B 25C 12D 8

QUESTION 13

 /1**Topic Resource: Slope**

Write the standard form of the equation of the line passing through the point $(2, 5)$ and perpendicular to the line $4x - y = 2$

QUESTION 14

 /1

Topic Resource: Simplifying Expressions**Multiply $(4x + 7)(2x + 1)$ and simplify.**

QUESTION 15

 /1**Topic Resource: Simplifying Expressions****Multiply $(x - 1)(x + 9)$ and simplify.**

QUESTION 16

 /1**Topic Resource: Slope****Find the slope of the line passing through the points $(-2, 7)$ and $(-4, 2)$**

A $-\frac{2}{5}$

B $\frac{4}{3}$

C $\frac{5}{2}$

D $\frac{2}{7}$

QUESTION 17

 /1

Topic Resource: Slope

A line has a slope $m = 2$. Determine whether the line passing through $(5, 4)$ and $(3, 5)$ is parallel or perpendicular to the first line.

- A Parallel
 B Perpendicular

QUESTION 18

 /1**Topic Resource: Slope**

Determine whether the graphs of $y = -3x + 5$ and $2x - 6y - 9$ are parallel or perpendicular lines.

- A Parallel
 B Perpendicular

QUESTION 19

 /1**Topic Resource: Systems of Equations**

Solve the system of equations: $4x + 3y = -14$ and $8x - 2y = 12$

- A $(5.5, -0.25)$ B $(-2, -5)$
 C $(-5, 2)$ D $(0.25, -5)$

QUESTION 20

 /1**Topic Resource: Solving Equations**

Find the solution.

$$\frac{6}{w-3} = \frac{5}{w+3}$$

- A -33 B 24
 C -22 D 33

QUESTION 21

 /1**Topic Resource: Comparing Decimals**

Arrange the following numbers in increasing order.

\equiv 6.782 \equiv 6.7824 \equiv 6.281 \equiv 6.689

QUESTION 22

 /2**Topic Resource: Properties of Exponents**

Megan and Sarah simplified the expression $(5x^2)(6x^8)$. Megan got $30x^{16}$ and Sarah got $30x^{10}$

1. Type the name of the person with the correct simplified expression.
2. How do you know that person had the correct answer? Explain.

QUESTION 23

 /2**Topic Resource: Properties of Exponents**

Richelle and Colleen both simplified the expression $\frac{x^6}{x^2}$. Richelle got x^4 and Colleen got x^3

1. Type the name of the person with the correct simplified expression.
2. How do you know that person had the correct answer? Explain.

QUESTION 24

 /1

Topic Resource: Patterns

What is the 7th number in this pattern? 8, 13, 18, 23, ...

A 28

B 33

C 38

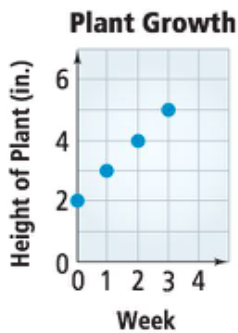
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QUESTION 25

/1

Topic Resource: Interpreting Graphs

Which of the following is the best statement about the graph?



A After 4 weeks, the plant will be 7 inches tall.

B The plant was 1 inch tall at the beginning of the experiment.

C After 2 weeks, the plant was 3 inches tall.

D After 6 weeks, the plant will be 8 inches tall.

QUESTION 26

/1

Topic Resource: Writing Expressions

Libby starts with \$20 and saves \$6 each week. Which algebraic expression models the total amount saved?

W represents the number of weeks.

A $20 + 6w$

B $20 - 6w$

C $6 + 20w$

D $(6 + 20)w$

QUESTION 27

/1

Topic Resource: Patterns

Identify a pattern and find the next three numbers in the pattern 3, 6, 10, 15...

A pattern: add 3 to the previous term
next 3 numbers: 18, 21, 24

B pattern: add 3, then add 4, then add 5,
and so on
next 3 numbers: 18, 22, 27

C pattern: add 3, then add 4, then add 5,
and so on
next 3 numbers: 21, 28, 36

D pattern: add 5 to the previous term
next 3 numbers: 20, 25, 30

QUESTION 28

 /1**Topic Resource: Writing Expressions**

Which algebraic expression models the word phrase *the quotient of the sum of 2 and a number b, and 3*?

A $\frac{2+b}{3}$

B $\frac{2}{3} + b$

C $2 + \frac{b}{3}$

D $\frac{2+3}{b}$

QUESTION 29

 /1**Topic Resource: Simplifying Expressions**

Which expression represents the simplest form of $4m + 3(m + n)$

A $7m + 3n$

B $4m + 3mn$

C $3m + 4n$

D $7m^2 + 3n$

QUESTION 30

 /1

Topic Resource: Graphing Inequalities

What inequality is shown by the graph below?



A $x < 2$

B $x > 2$

C $x \leq 2$

D $x \geq 2$

QUESTION 31

/2

Topic Resource: Adding Fractions

Sydney and Kierstin simplified the expression $\frac{5}{12} + \frac{7}{8}$. Sydney got $\frac{31}{24}$ and Kierstin got $\frac{12}{20}$

1. Type the name of the person with the correct simplified expression.
2. How do you know that person had the correct answer? Explain.

QUESTION 32

/1

Topic Resource: Simplifying Expressions

Simplify the expression $\frac{5 + \sqrt{(-5)^2 - 4(1)(6)}}{2}$

A -2

B 3

C 8

D 6

QUESTION 33

/2

Topic Resource: Rounding

Kristine and Phil rounded 321.987 to the nearest hundredths place. Kristine rounded and got 321.98. Phil rounded and got 321.99.

1. Type the name of the person with the correct rounded value.
2. How do you know that person had the correct answer? Explain.