

# Relations and Functions

Name \_\_\_\_\_



Solve each problem and find its matching answer. Decode the message using the letter of the answer associated with each question.

$\overline{11}$   $\overline{17}$   $\overline{15}$     $\overline{6}$   $\overline{7}$   $\overline{8}$   $\overline{13}$   $\overline{15}$   $\overline{10}$     $\overline{9}$   $\overline{16}$     $\overline{11}$   $\overline{15}$   $\overline{1}$   $\overline{11}$     $\overline{8}$   $\overline{15}$   $\overline{2}$   $\overline{2}$   $\overline{20}$   $\overline{21}$   $\overline{15}$   $\overline{2}$   
 $\overline{2}$   $\overline{15}$   $\overline{6}$   $\overline{11}$     $\overline{20}$   $\overline{6}$   $\overline{19}$     $\overline{10}$   $\overline{15}$   $\overline{14}$   $\overline{15}$   $\overline{12}$   $\overline{5}$   $\overline{15}$   $\overline{19}$     $\overline{15}$   $\overline{20}$   $\overline{14}$   $\overline{17}$     $\overline{19}$   $\overline{20}$   $\overline{4}$   
 $\overline{15}$   $\overline{1}$   $\overline{14}$   $\overline{15}$   $\overline{15}$   $\overline{19}$   $\overline{2}$     $\overline{11}$   $\overline{17}$   $\overline{15}$     $\overline{3}$   $\overline{9}$   $\overline{3}$   $\overline{7}$   $\overline{18}$   $\overline{20}$   $\overline{11}$   $\overline{12}$   $\overline{9}$   $\overline{6}$     $\overline{9}$   $\overline{16}$   
 $\overline{11}$   $\overline{17}$   $\overline{15}$     $\overline{3}$   $\overline{18}$   $\overline{20}$   $\overline{6}$   $\overline{15}$   $\overline{11}$  !

Evaluate each function at the specified location and find its matching answer in the box at the right:

1.  $f(x) = 3x^2 + 2x + 1; f(2)$

2.  $f(x) = (-7x + 2) - (4x - 3); f(-1)$

3.  $f(x) = |-8x| + |3x + 6|; f(-3)$

4.  $f(x) = -(2x + 5)^2; f(1)$

5.  $f(x) = 2(6x); f(4)$

6.  $f(x) = 3x - 16; f(-2)$

7.  $f(x) = (x + 8)(x - 4); f(3)$

8.  $f(x) = \frac{5x + 1}{x + 2}; f(-2)$

9.  $f(x) = \frac{x + 3}{2x} + 1; f(-3)$

10.  $f(x) = \frac{x + 4}{4x} + 2; f(-4)$

11.  $f(x) = -x^2 - x - 1; f(-2)$

**Answer Box for Questions 1 – 11:**

**Hypen (-)** -9/4

**Z** 3

**Y** -49

**X** 17

**W** -16

**V** 48

**U** -11

**T** -3

**S** 16

**R** 2

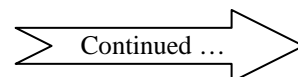
**Q** 49

**P** 27

**O** 1

**N** -22

**M** unknown



Match each relation with its graph in the Graph Box below.

12.  $y = x$

13.  $y = \frac{1}{2}x - 1$

14.  $y = 3x + 1$

15.  $y = |x|$

16.  $y = x^2 + 1$

17.  $y = -x$

18.  $y = 3$

19.  $y = -\frac{1}{2}x - 1$

20.  $y = -3x + 1$

21. Which graph is NOT the graph of a function?

**Graph Box:**

