

**Wagner School: Math Assessment Answer Key and Reference Sheet**

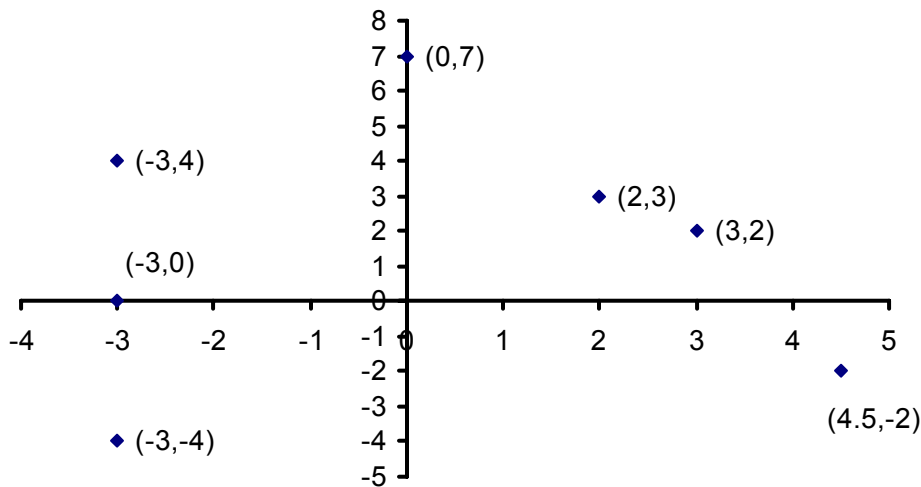
No.	Question	Answer	Reference to Math Review Course Pack (Page No.)
1	$0 - 3 - 2 =$	- 5	
2	$1 - (1 - 2) =$	2	
3	$-97 + 29 =$	- 68	
4	$\frac{1}{10} - \frac{1}{12} =$	$\frac{1}{60}$	Operations in Fractions (15-20)
5	$\frac{1}{2} * (\frac{1}{3} - \frac{1}{6}) =$	$\frac{1}{12}$	Operations in Fractions (15-20)
6	$\frac{\frac{2}{3}}{\frac{4}{5}} =$	$\frac{5}{6}$	Operations in Fractions (15-20)
7	$(0.02) * (0.31) =$	0.0062	Multiplication of Decimals (24)
8	$\frac{.026}{.00013} =$	200	Division of Decimals (25)
9	Express your answer as a decimal: $\frac{1}{4} * 7 =$	1.75	Conversion between Decimals and Fractions (26)
10	$12^2 =$	144	Algebra: Exponents (83 – 88)
11	$12^{-2} =$	$\frac{1}{144}$	Algebra: Exponents (83 – 88)
12	$a^2(a^3) =$	$a^5$	Algebra: Exponents (83 – 88)
13	$\sqrt{81} =$	9	Algebra: Square Roots (88)
14	50 is what proportion of 200?	$\frac{1}{4}$ or 0.25	Proportions (42 – 47)
15	What is 12% of 85?	10.2	Percents (29 – 34)
16	20% of 15 is what % of 24?	12.5%	Percents (29 – 34)
17	What is 12.4 increased by 75%?	21.7	Percents (29 – 34)

No.	Question	Answer	Reference to Math Review Course Pack (Page No.)
18	The rate of inflation in 1994 was .026. How would this be expressed as a percent?	2.6%	Percents (29 – 34)
19	A student earned \$2000 working at a summer job before entering college. The following summer, the student earned \$2525. What percent increase did the student's earning grow from one summer to the next?	26.25%	Percent Change (35 – 38)
20	Tamara just received an 8% pay raise, which amounts to a \$2,000 increase in her annual salary. Martin was earning \$23,000 a year and just heard that as of next week, he will be making \$24,500 a year. How much was Tamara making before her raise? Who received a greater percent increase in annual salary, Martin or Tamara?	\$25,000; Martin received a 6.5% increase, therefore Tamara received a greater percent increase in salary (by 1.5%)	Percents (29 – 34); Percent Change (35 – 38)
21	In the Big Bucks Lottery, the chance of winning a \$10 prize is 1%. How many people do you expect would win a \$10 prize if 1000 people each buy a single ticket to Big Bucks?	10	Percents (29 – 34)
22	Solve for x: $3x + 2 = 17$	$x = 5$	Algebra: Solving Equations (106 – 117)
23	Solve for x: $2(x + 7) = 3(3 - x) + 8$	$x = \frac{3}{5}$	Algebra: Solving Equations ((106 – 117)
24	Solve for x: $ax = b(x + d)$	$x = \frac{bd}{(a - b)}$	Algebra: Solving Multivariate Equations (118 – 121); Solving Equations (106 – 117)
25	Solve for x: $\frac{1}{3 + x} = \frac{1}{3x - 1}$	$x = 2$	Algebra: Solving Equations ((106 – 117)
26	Solve for x: $y = 2x + 3$	$x = \frac{y - 3}{2}$	Algebra: Solving Multivariate Equations (118 – 121); Solving Equations (106 – 117)
27	If $x = -1$ , then $-(x^4 + x^3 + x^2 + x) =$	0	Algebra: Exponents (83 – 88); Algebra: Solving Equations ((106 – 117)

No.	Question	Answer	Reference to Math Review Course Pack (Page No.)
28	Linda purchased X items from a company for \$8 each. The postage and handling charges for the first item is \$3, plus \$1 for each additional item. Write an algebraic expression which represents the total dollar amount of Linda's purchase, including postage and handling of X items.	$9x + 2$	Algebra: Solving Equations ((106 – 117))
29	The value of a bag of coins consisting of nickels, dimes, and quarters is \$1.90. There are half as many quarters as nickels, and three more nickels than dimes. Write an algebraic expression representing this information, and solve for how many coins of each kind are in the bag.	$0.10x + 0.05(x + 3) +$ $0.25\left[\frac{1}{2}(x + 3)\right] = 1.90$ $x = 5$ ; therefore 5 dimes, 8 nickels, and 4 quarters are in the bag	Algebra: Solving Equations ((106 – 117))

(30) Plot and label the following points in the axes given below:

- (a) (2, 3)      (b) (3, 2)      (c) (4.5, -2)      (d) (-3, -4)      (e) (-3, 4)  
 (f) (0, 7)      (g) (-3, 0)



**Reference**

Graphing: Elements of a Graph (50 – 52); Coordinates of Points (52 – 55)

No.	Question	Answer	Reference to Math Review Course Pack
31	What is the slope of the line with the equation $2y - x = 3$ ?	$\frac{1}{2}$	Graphing: Slope (59 – 61); Equation of a Line (63 – 66)
32	What is the equation of the line through the points (1, 5) and (3, -3)?	$y = -4x + 9$	Graphing: Equation of a Line (63 – 66)
33	Point A is (4, 1) and Point B is (2, 5). What is the slope of the line that connects these two points?	-2	Graphing: Slope (59 – 61)
34	Which letter represents the point (3, 2)?	V	Graphing: Elements of a Graph (50 – 52); Coordinates of Points (52 – 55)
35	Where is the origin?	R	Graphing: Elements of a Graph (50 – 52); Coordinates of Points (52 – 55)
36	Which point is on the y axis?	S	Graphing: Elements of a Graph (50 – 52); Coordinates of Points (52 – 55)
37	What is the equation of the line shown in the graph below?	$y = 10 + \frac{1}{5}x$	Graphing: Matching a Graph of a Straight Line with its Equation (65)
38	Using the graph in question #37, is the slope of the line positive, negative, infinite, or zero?	Positive	Graphing: Slope (59 – 61)
39	In the graph below, the line A shifts from its initial position of $A_0$ to its final position at $A_1$ . If initially the equation of line $A_0$ is $y = mx + b$ , what must have changed in this equation for this sort of shift to occur, y, m, x, or b?	m (slope)	Graphing: Comparing Lines on a Graph (68 – 70); Examining the Shift of a Line (72)
40	In the graph below, the line B shifts from its initial position of $B_0$ to its final position at $B_1$ . If initially the equation of line $B_0$ is $y = mx + b$ , what must have changed in this equation for this sort of shift to occur, y, m, x, or b?	b (y-intercept)	Graphing: Comparing Lines on a Graph (68 – 70); Examining the Shift of a Line (72)
41	X is defined as the series “5, 6, 7, 8.” Solve: $\sum x^2 =$	174	Summation Notation (138)

No.	Question	Answer	Reference to Math Review Course Pack
42	Last semester, Laura took an urban studies course where she had three exams – two midterms and a final. Each midterm counted for 25% of her final course grade. The final exam was worth 50%. She received a 90 on her first midterm, a 94 on her second midterm, and a 77 on her final exam. What is her final course average?	84.5	Weighted Average (133)