

First & Last Name: _____

Accelerated Math Diagnostic for Rising 7th Graders

DIRECTIONS:

Complete as many of the problems below, as you can. You may not use a calculator. You may not ask for or have help. You may not reference notes, the internet, etc. For every answer you do not know or cannot remember how to answer, please skip it and leave it blank.

This test will take some time to complete, so please do not feel you have to complete it all at once. When you do finish it, submit it to me online at: <http://www.kennedyskids.com/submit-assignments.html> If you have any difficulty submitting it, please contact me through Remind.

** This is only a diagnostic assessment. It does not count as a grade. It does not count against you. It shows me what you know and shows me how to support you this summer and next year. ☺ **

MGSE6.RP.1

- 1) For every 2 wings there is 1 beak. Write this ratio using the three forms.

MGSE6.RP.2 – Show your work.

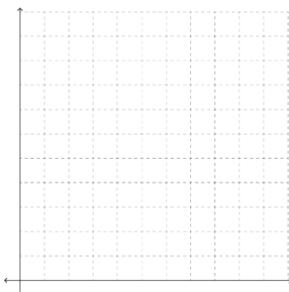
- 2) We paid \$75 for 15 hamburgers, what is the unit rate per hamburger?

MGSE6.RP.3a – Show your work.

- 3) What is the missing value?

Steel (kg)	Carbon (g)
50	250
60	300
70	
80	400

- 4) Plot the values from the above table onto the coordinate plane.



- 5) A certain paint color is obtained by mixing the correct ratio of red and blue paints. Every time a batch is made, the mixer records the amounts of each color used. One of the batches in the table below was made incorrectly. Which batch should be rejected?

Batch	Red (gal)	Blue (gal)
1	4	6
2	2	3
3	12	24
4	8	12

MGSE6.RP.3b – Show your work.

- 6) If it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours?

MGSE6.RP.3c – Show your work.

- 7) A 15% tip on a diner bill is \$2.55. How much is the bill?
- 8) Jane will receive 18% less of her regular pay when she retires. Her regular pay is \$500 per week. How much will she make when she retires?

MGSE6.RP.3d

- 9) Given 1 in. = 2.54 cm, how many centimeters are in 6 inches?

MGSE6.NS.1 – Draw a model to help you solve the problems. Show your work.

- 10) Create a story context for $(\frac{2}{3}) \div (\frac{3}{4})$ and use a visual fraction model to show the quotient.
- 11) How much chocolate will each person get if 3 people share $\frac{1}{2}$ lb of chocolate equally?
- 12) How many $\frac{3}{4}$ -cup servings are in $\frac{2}{3}$ of a cup of yogurt?
- 13) How wide is a rectangular strip of land with length $\frac{3}{4}$ mi and area $\frac{1}{2}$ square mi?

MGSE6.NS.2 – Use long division to solve. Show your work.

14) $3795 \div 15$

MGSE6.NS.3 – Solve. Show your work.

15) $16.4 \div 0.08$

16) 16.4×0.08

17) $16.4 - 0.08$

18) $16.4 + 0.08$

MGSE6.NS.4 – Show your work.

19) What is the LCM of 12 & 8?

20) What is the GCF of 96 & 48?

21) Rewrite $36 + 8$ using the distributive property.

MGSE6.NS.5

22) Carlos deposited \$28.50 into his bank account after making a \$20.00 withdrawal to pay for some school supplies. Represent the deposit and withdrawal using signed numbers.

23) In Barrow, Alaska, the northernmost town in the United States, the record high temperature is 79°F , recorded on July 13, 1993. The record low is 56°F below zero, recorded on February 3, 1924. Represent the high and low temperatures as signed numbers.

24) What would 0 represent in the above question?

MGSE6.NS.6a

25) What is the opposite of 0?

26) Describe the locations of 3 and -3 with respect to 0 on a number line.

MGSE6.NS.6b

27) In which quadrant is $(3, -\frac{4}{5})$?

28) If the point $(-1.9, -2)$ is reflected across the x-axis, which quadrant will it be in?

29) What are the correct sign description of a point in Quadrant II?

MGSE6.NS.6c

30) Where is $\frac{2}{3}$ on a number line? Between:

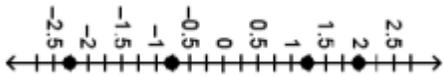
A) -3 and -2

B) -1 and 0

C) 0 and 1

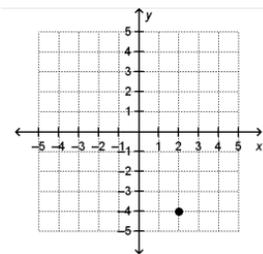
D) 2 and 3

31) What numbers are graphed on the number line below?



____, _____, _____, _____

32) What are the coordinates of the point on the graph?



MGSE6.NS.7a

33) Interpret $-3 > -7$ as a statement (i.e. where is -3 is located on a number line compared to -7).

MGSE6.NS.7b

34) The thermometer at Bruce's house shows a temperature of -2 °F. The thermometer at Zan's house reads -5 °F. Write an inequality that represents this situation.

MGSE6.NS.7c

35) Which number has the same absolute value as 2?

36) Find two numbers a and b with the following properties.

a. $a > b$, $|a| > |b|$ _____ & _____

b. $a > b$, $|a| < |b|$ _____ & _____

c. $a > b$, $|a| = |b|$ _____ & _____

MGSE6.NS.7d

37) Does an account balance less than -30 dollars represent a debt greater than 30 dollars?

MGSE6.NS.8

38) On a coordinate plane, point A is located at $(-5, 3)$. To get to point B, move 8 units to the right, 6 units down, and 1 unit to the left. What are the coordinates of point B?

39) What is the distance between point A at $(-7, 5)$ and point B at $(2, 5)$?

MGSE6.EE.1 – Show your work.

40) Write the exponential expression that equals $5 \times 5 \times 5 \times 5 \times 5 \times 5$?

41) Solve $5 \times 5 \times 5 \times 5 \times 5 \times 5$.

42) Evaluate $11^2 \times 2^3 + 3^5 + 9^3$.

MGSE6.EE.2a – Show your work.

43) Write the expression "Subtract y from 5" as a numerical expression.

MGSE6.EE.2b

44) What is a coefficient in the expression: $7x^2 + 2y - 8$?

45) What is the constant in the expression: $7x^2 + 2y - 8$?

46) What is a term in the expression: $7x^2 + 2y - 8$?

MGSE6.EE.2c – Show your work.

47) Helen bought notebooks and pencils for school. The number of pencils she bought is given by $6(n - 3)$, where n is the number of notebooks she bought. How many pencils did Helen buy if she bought 5 notebooks?

48) Evaluate $7 + 6 \times 5^2 + 3$.

49) If a side of a cube is 3 in. Use the formula $V = s^3$ to find the volume.

50) If a side of a cube is $\frac{1}{2}$ in. Use the formula $A = 6s^2$ to find the surface area.

MGSE6.EE.3

51) Apply the distributive property to the expression $3(2 + x)$ to produce an equivalent expression.

52) Apply the commutative property to the expression 3×6 to produce an equivalent expression.

53) Simplify the expression $y + y + y$.

MGSE6.EE.4 – Show your work.

54) Is $4x - 2 + 5x$ equivalent to $7x$?

MGSE6.EE.5 – Show your work.

55) For what value of x is the equation $4 = 12x - 2$ true?

56) For what value of x is the inequality $3 < 2x - 9$ true?

57) If $x = 4$, would $2 \leq x + 6$ be true?

58) If $x = 5$, would $18 = 6x - 12$ be true?

MGSE6.EE.6

59) Joan has 3 fewer dogs than rabbits. If r is the number of rabbits Joan has, write an expression that represents the total number of animals Joan has?

MGSE6.EE.7 – Show your work.

60) Solve for x : $\frac{1}{2}x = 16$.

MGSE6.EE.8 – Show your work.

61) Jenna eats dinner at a restaurant. Her bill is \$14.50. Jenna pays her bill and leaves a tip. Write an inequality to represent the total cost of Jenna's dinner.

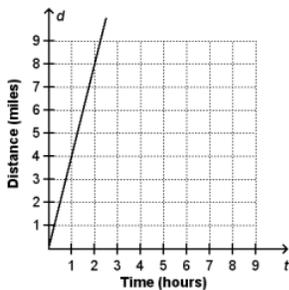
62) How many solutions does $x > 12$ have?

63) Graph $x > 12$ on a number line.

64) Jesse runs 3 miles a week. Is the number of miles she runs or the number of weeks she runs the dependent variable?

MGSE6.EE.9 – Show your work.

65) What is the equation of this graph? (Hint: Make a table first.)

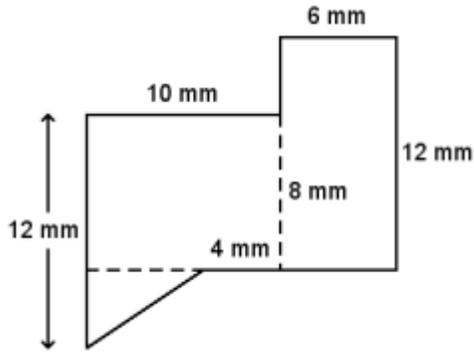


66) What is the equation of this table?

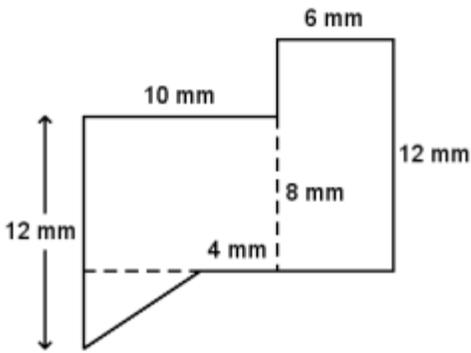
Time (minutes), t	Number of words, w
0	0
1	52
2	104
3	156

MGSE6.G.1

67) What is the area of the triangle in the figure below?

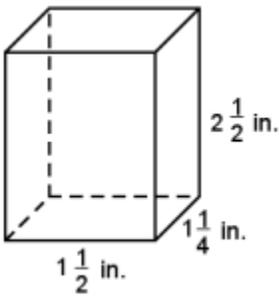


68) What is the area of the figure below?



MGSE6.G.2

69) What is the volume of the rectangular prism?



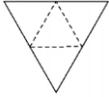
MGSE6.G.3

70) Which name best describes the polygon with vertices (0, 0), (4, 8), (12, 8), and (16, 0)?

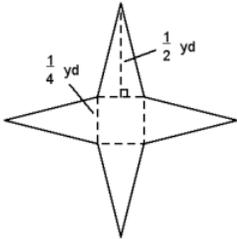
71) A rectangular plot of land is represented on a map by the vertices (10, 10), (10, 90), (70.5, 90), and (70.5, 10), where the x- and y-coordinates are measured in yards. What is the area of the plot of land?

MGSE6.G.4

72) What three-dimensional figure can be formed by folding the net shown?



73) The net of a square pyramid is shown. Find the surface area of the pyramid.

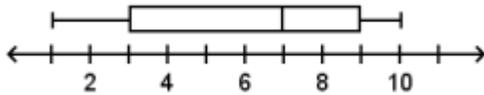


MGSE6.SP.1

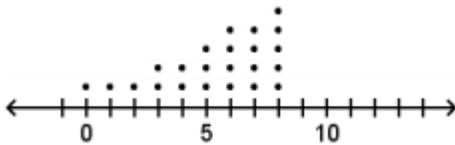
74) Is "How old am I?" a statistical question?

MGSE6.SP.2

75) Find the interquartile range of the data displayed in the box plot shown.



76) In which direction is the dot plot below skewed?



MGSE6.SP.3

77) The test scores for a class are shown. What is the mean test score?
79, 80, 92, 92, 81, 100, 88

78) What is the median of the data above?

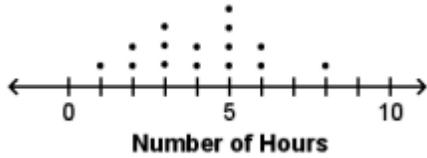
MGSE6.SP.4

79) Draw a line plot for the following data:
2, 5, 7, 2, 11, 13, 5, 7, 1, 10, 10, 2, 3, 5, 1, 11

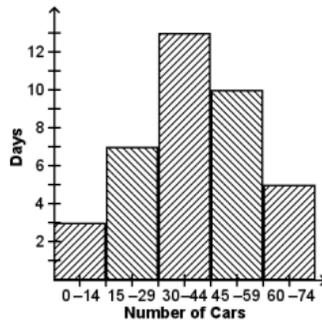
80) Draw a box plot for the following data:
 2, 5, 7, 2, 11, 13, 5, 7, 1, 10, 10, 2, 3, 5, 1, 11

MGSE6.SP.5a

81) The dot plot below describes how many hours Colleen spent training each day. How many days did Colleen spend training?



82) How many days did the traffic engineer collect data?



MGSE6.SP.5b

83) Which measures of center and variability best describe the data set shown?
 17, 19, 15, 12, 10, 21, 2, 16, 18, 19, 20, 16, 11, 12, 17

84) Describe the distribution of the dot plot below: (Hint: GCOOPS).