

Name: _____

Math Teacher: _____

8th Grade MSA Practice #1
PART 1: No Calculators Allowed

1. Evaluate $4ab + b - a$, if $a = 4$ and $b = 6$.

- a) 42 b) 108 c) 98 d) 102

2. Evaluate $\frac{jk}{12} + (j - 2k)$, if $j = 8$ and $k = 6$.

- a) 0 b) 8 c) 12 d) 44

3. Evaluate: $\frac{(2-10)}{4} + 3^2$

- a) 11 b) 4 c) 12 d) 7

4. Simplify the following expression:

$$2a - 3b + 5a + 6c - 2b$$

- a) $8abc$ c) $3a + 5b + 6c$
b) $7a - 5b + 6c$ d) $7a - 5b$

5. Solve for x: $8x - 5x + 15 = 24$

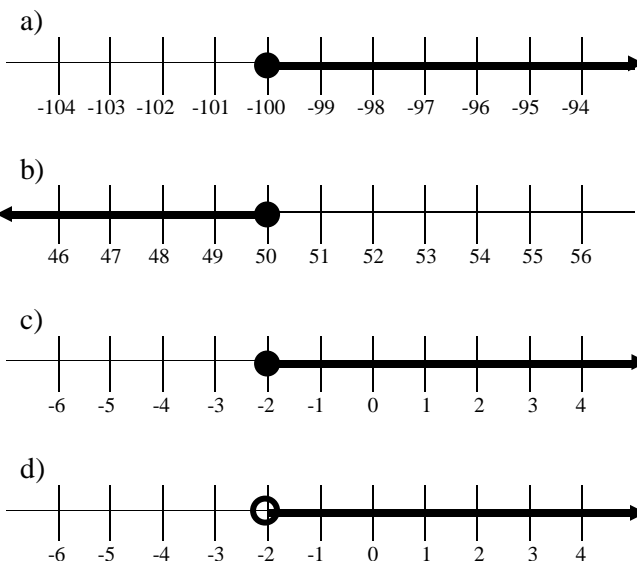
- a) $x=9$ b) $x=3$ c) $x=\frac{19}{3}$ d) $x=\frac{29}{3}$

6. Solve for r: $6r + 32 \geq -10$

- a) $r \geq -7$ b) $r \geq \frac{22}{6}$ c) $r \leq -7$ d) $r \leq 6$

7. Identify the solution to the inequality:

$$50x \geq -100$$



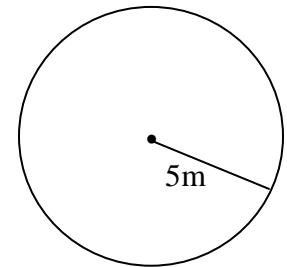
8. Which equation is equivalent to:

$$3x + 1 = 10$$

- a) $3x = 11$ c) $4x = 10$
b) $4x = 11$ d) $3x = 9$

9. The Green Thumb Landscaping

Company was asked to plant flowers in a circular garden. What is the area of the garden shown? $A = \pi r^2$ where $\pi = 3.14$.



- a) 785 m^2
b) 78.5 m^2
c) 78.3 m^2
d) 7850 m^2

10. The grocery store surveyed costumers to find out their favorite fruit. The results are shown below.

**Apples = 15%, Pears = 10%,
Plums = 25%, Bananas = 50%**

The grocery store wanted to display this information on a circle graph. How many degrees would the apples have in the circle graph?

- a) 54° b) 27° c) 47.1° d) 90°

11. Susan was asked to make a box and whisker plot of the data below. What should her lower quartile, median, and upper quartile be?

129, 130, 88, 97, 120, 86, 83, 125, 95

- a) LQ = 87, Med = 97, UQ = 127
b) LQ = 86, Med = 95, UQ = 129
c) LQ = 129, Med = 120, UQ = 95
d) LQ = 83, Med = 106, UQ = 130

Name: _____

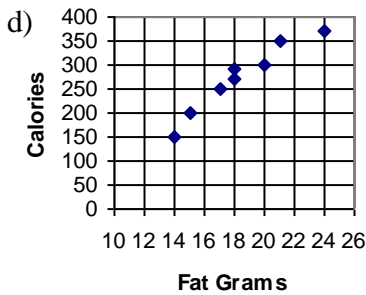
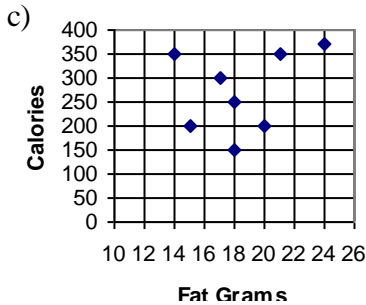
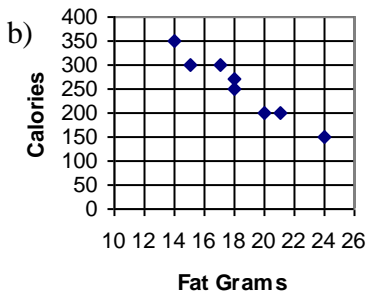
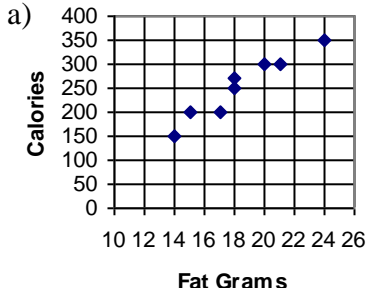
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12. Which scatter plot displays the data in the table below?

Fast Food Kid Meals

Fat Grams	14	15	17	18	18	20	21	24
Calories	150	200	200	250	270	300	300	350



13. $-21 - (-32) =$

- a) -53 b) 11 c) -11 d) 53

14. $(-2)^3 =$

- a) 6 b) -8 c) 8 d) -6

15. $3^3 \cdot 3^4 \cdot 3^2 =$

- a) 3^{24} b) 3^9 c) 9^9 d) 6^7

STOP: End Part 1

8th Grade MSA Practice #1
PART 2: Calculators Allowed

16. Study the sequence below. What is the eighth term of this sequence?

5, 9, 13, 17...

- a) 34 b) 33 c) 21 d) 29

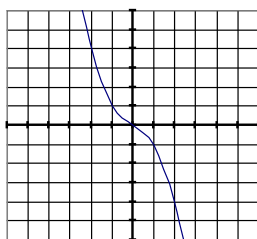
17. Study the sequence below. What is the tenth term of this sequence?

.25, 1, 4, 16

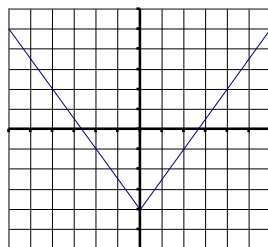
- a) 16,384 b) 230 c) 64 d) 65,536

18. Which graph is a linear function?

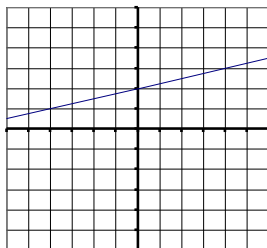
a)



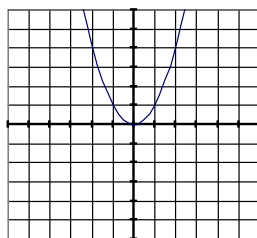
b)



c)



d)



19. Shawn set up a lemonade stand. He spent \$50 on supplies and charges \$2 per lemonade. Write the expression to represent the profit, where L equals the number of lemonades sold.

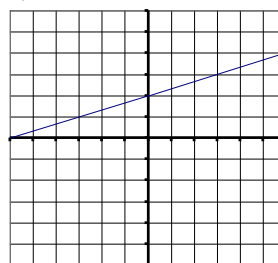
- a) $50L + 2$ c) $2L + 50$
b) $2L - 50$ d) $2L = 50$

20. Sharon has \$100 in her savings account and plans on saving \$5 a week. Susan has \$250 and plans on spending \$15 a week. Which inequality shows Sharon's amount is greater than Susan's amount? Let W = the number of weeks

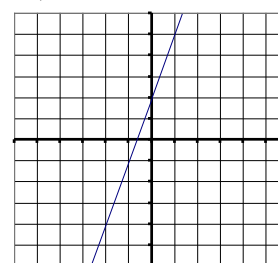
- a) $100 + 5W > 250 - 15W$
b) $100 + 5W < 250 - 15W$
c) $100 + 250 > 5W - 15W$
d) $350 < 10W$

21. Which graph is: $y = -3x + 2$?

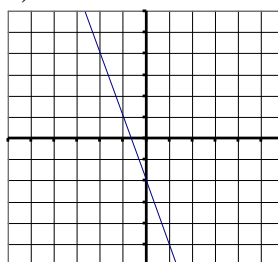
a)



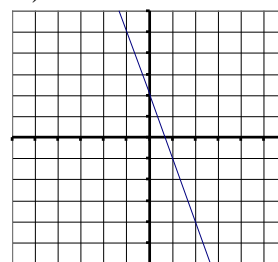
b)



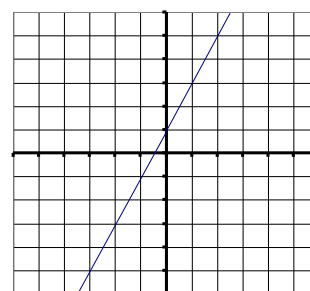
c)



d)



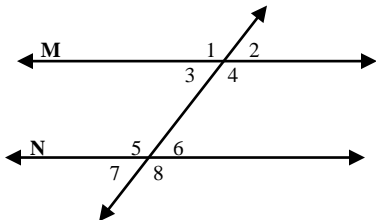
22. Determine the slope of the line below:



- a) -1 b) 0 c) 1 d) 2

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PART 2: Calculators Allowed

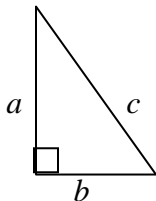
23. Line M is parallel to Line N.
 $\angle 3$ and $\angle 6$ are _____ angles?



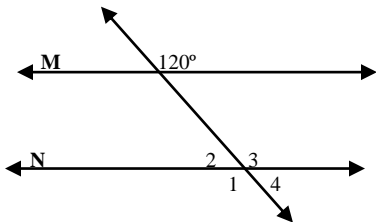
- a) corresponding
- b) alternate interior
- c) alternate exterior
- d) vertical

24. Which formula is true for the right triangle below?

- a) $a+b=c$
- b) $\sqrt{a} + \sqrt{b} = c$
- c) $a^2 + b^2 = c$
- d) $a^2 + b^2 = c^2$



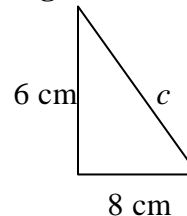
25. Line M and Line N are parallel.
 What is the measure of $\angle 1$?



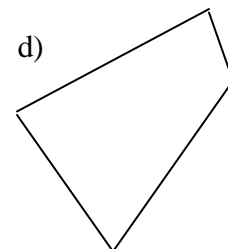
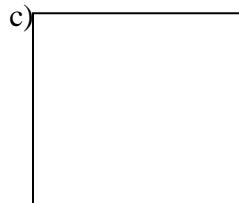
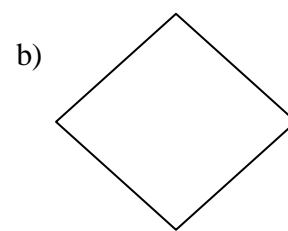
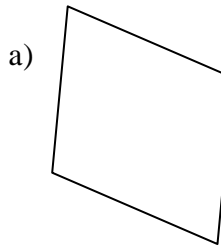
- a) 60°
- b) 120°
- c) 180°
- d) 90°

26. Find the length of the missing side of the right triangle.

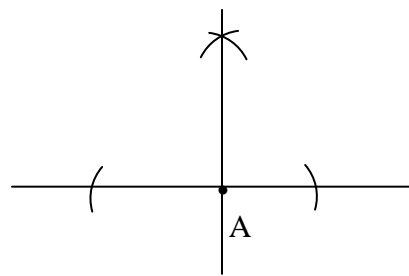
- a) 12 cm
- b) 10 cm
- c) 8 cm
- d) 14 cm



27. Choose the rhombus with the following dimensions. Side = 2.2 cm



28. Tom was asked to construct a perpendicular line through point A on the line below. Study his arcs. Is Tom's construction correct?

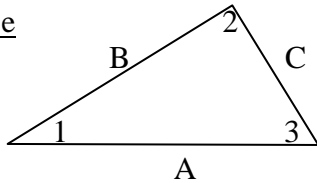


- a) Yes
- b) No

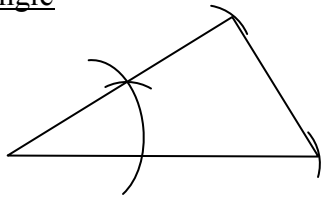
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PART 2: Calculators Allowed

29. Tammy was asked to draw a triangle that is congruent to the one given below. Study the steps she used. Did she do it correctly?

Given Triangle



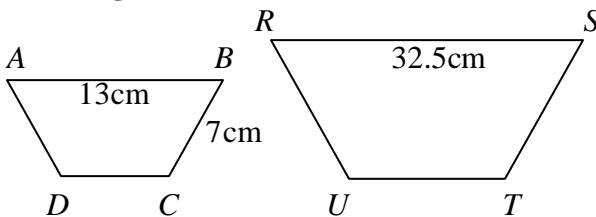
Tammy's Triangle



- Step 1: Draw a starter line
 Step 2: Copy Segment A
 Step 3: Copy Angle 1
 Step 4: Copy Segment B
 Step 5: Connect Segment A and Segment B to make Segment C

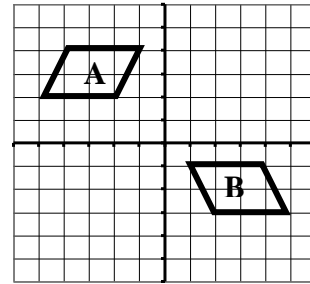
- a) Yes b) No

30. Trapezoid $ABCD$ is similar to Trapezoid $RSTU$. What is the length of \overline{ST} ?



- a) 14cm b) 21cm c) 17.5cm d) 16.5cm

31. Describe the transformations from Figure A to Figure B.



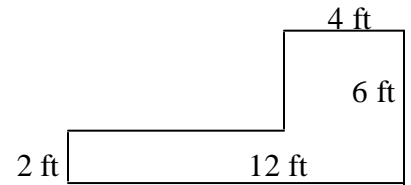
- a) vertical reflection, translation down 5
 b) horizontal reflection, translation down 5
 c) 180° rotation, translation down 5
 d) horizontal reflection, translation down 4

32. Calculate the area of a circle with a radius of 2.5 cm.

($A = \pi r^2$ where $\pi = 3.14$)

- a) 19.625 cm² c) 14.3 cm²
 b) 15.7 cm² d) 20.625 cm²

33. Calculate the area of the figure below.

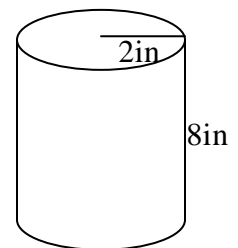


- a) 50 ft²
 b) 40 ft²
 c) 24 ft²
 d) 72 ft²

34. Calculate the volume of the cylinder.

($V = \pi r^2 h$ where $\pi = 3.14$)

- a) 104.08 in³
 b) 100.42 in³
 c) 100.48 in³
 d) 98.2 in³



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PART 2: Calculators Allowed

35. Safeway is having a sale on oranges. You can buy 2 oranges for 84¢. How many oranges can you buy with \$16.80?

- a) 30 b) 32 c) 40 d) 20

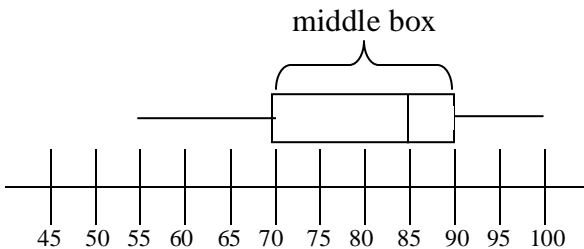
36. Use the table below to answer the question. When will the DC flight to Boston arrive in Boston?

City	Depart	City	Arrive
DC	11:30 AM	LA	2:25 PM
Boston	7:21 AM	DC	9:13 AM
Detroit	12:58 PM	LA	4:32 PM
LA	6:22 AM	Orlando	2:51 PM
DC	1:47 PM	Boston	3:05 PM

- a) 7:21 AM c) 1:47 PM
 b) 9:13 AM d) 3:05 PM

37. Describe what the middle box represents in this situation.

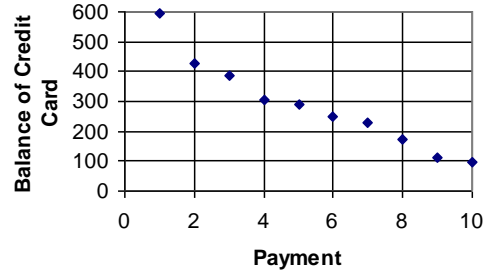
Math Test Scores



- a) 25% of the students scored between 70 and 90.
 b) 40% of the students scored between 70 and 90.
 c) 50% of the students scored between 70 and 90.
 d) represents all scores

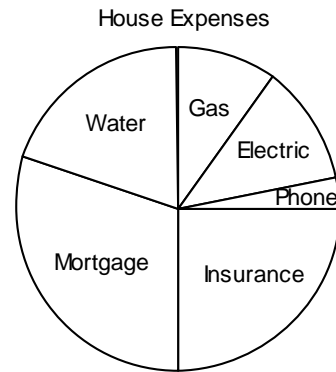
38. Choose the statement that best describes the data on the scatter plot.

Shawn's Credit Card Debt



- a) As payments increase, the credit card balance increases.
 b) As the payments increase, the credit card balance decreases.
 c) As the payments increase, the credit card balance stays the same.

39. Choose the statement that is NOT true about the circle graph below.



- a) 50% of the house expenses are spent on mortgage and water.
 b) 25% of the house expense are spent on gas, electric, and phone.
 c) 50% of the house expenses are spent on water and insurance.
 d) 75% of the house expenses are spent on water, mortgage, and insurance.

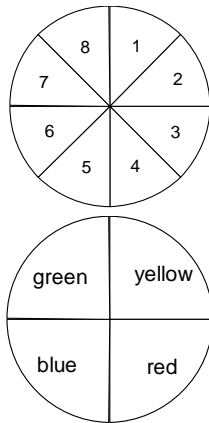
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40. Peter put the numbers: 1, 2, 3, 4, 5 in a hat. He has to select two numbers from the hat. He pulls one number from the hat, does not replace it, then pulls the second number. How many ways can Peter pull two numbers from the hat?

- a) 5 b) 20 c) 15 d) 2

41. Shannon needs to spin an even number and the color yellow to win the game. What is the probability of Shannon winning the game on the next spins (spin each spinner once).

- a) .5
b) 1/8
c) 25%
d) 1/6



42. There is 1 blue, 1 yellow, 1 red, and 1 green marble in a bag. What is the probability of pulling a red marble, then pulling a yellow marble without replacing the red marble?

- a) $\frac{1}{2}$ b) $\frac{1}{12}$ c) $\frac{1}{4}$ d) $\frac{2}{7}$

43. The results of a grocery store preference survey were recorded on the tally sheet below. What is the probability that the next person would choose Giant Food Store?

Store	Tally
Giant	/
Safeway	/
Superfresh	/

- a) $\frac{9}{20}$ b) $\frac{1}{2}$ c) $\frac{1}{4}$ d) $\frac{3}{10}$

44. $4.56 \times 10^5 =$

- a) 45,600,000 c) 45,600
b) 456 d) 456,000

45. Order the following numbers from least to greatest.

1.2, -4.6, $|-3.6|$, -4.2

- a) 1.2, $|-3.6|$, -4.2, -4.6
b) -4.2, -4.6, 1.2, $|-3.6|$
c) -4.6, -4.2, $|-3.6|$, 1.2
d) -4.6, -4.2, 1.2, $|-3.6|$

46. Simplify: $5(M - 3)$

- a) $5M - 15$ c) $5M + 15$
b) $5M - 3$ d) $M - 15$

47. Estimate: $\sqrt{56}$

- a) 7 b) 7.5 c) 8 d) 7.9

48. Trent goes on a 30 mile bike ride each Saturday. It takes him 4 hours to bike 30 miles. At this rate, how far can he ride in 6 hours?

- a) 180 miles c) 45 miles
b) 24 miles d) 15 miles

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PART 2: Calculators Allowed

49. A used car was on sale for \$5,120. It is now back at regular price which is \$ 6,400. What is the percent of increase from sale price back to regular price?

- a) 80% b) 25% c) 15% d) 50%

50. Jerry sells 16 necklesses for \$24.00. How much would he charge for 15 necklesses?

- a) \$20.50 b) \$20 c) \$24 d) \$22.50

STOP: End Part 2
