FINAL EXAM REVIEW
7 Math

Name: _____

Name:_____ Period: _____

7 Math Final Review

Solve for x.

1) $3x + 6 = 33$

2) $5x + 3 + 6x = 58$

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3) $4(2x - 6) = 8$

4) $x - 8 = -15$

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5) $\frac{2}{5}x = -10$

6) $\frac{1}{3}(9x - 15) = 16$

Tell whether the following is a Monomial, Binomial or Trinomial.

7) $6x + 3$

8) -25

9) $5x^2 + 7x - 8$

10) $(3x + 5)$

11) $3x^2y^3z$

Simplify the following polynomials

12) $2x + 9x$

13) $-7y - 8 + 10$

14) $3x - 9y + 7x - 2y$

15) $(3x + 2) + (x - 10)$

16) $(5x - 8y) - (4x + 7y)$

Factor (Reverse Distribute)

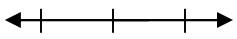
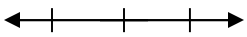
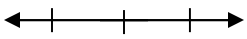
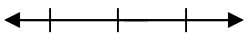
17) 8x + 24 18) 18x – 6 19) $\frac{3}{4}x+\frac{1}{4}$ 20) $\frac{2}{5}x+\frac{4}{5}$

Solve the following inequalities

21) 4x < 24 22) $2x \geq 12$ 23) $-5x \leq 35$ 24) – 6x > 36

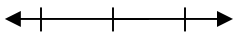
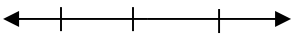
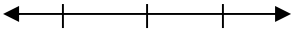
Graph the following inequalities

25) x < 10 26) $x \geq 5$ 27) 2 < x 28) $4 \leq x$

Solve and graph the inequalities

29) 4 > 7x + 18 30) $\frac{x}{3}+9>10$ 31) 10x + 2x – 7 > 29

Write the inequality and solve

32) Sue goes to the carnival with her friend. They pay $10 to get into the carnival plus $1 per ride. How many rides can Sue go on if she can spend at most $30?

Simplify

33) a) $|-5|$ b) $|3|$ c) $-|-2|$ d) $|-5-9|$

Evaluate

34) a) $x+4y^2$ *if* $x=3$ *and* $y=3$ b) $y-5x^3$ *if* $x=2$ *and* $y=20$

Use the formula $D = r \cdot t$

35) a) Sue travels 200 miles in 5 hours. What speed is she traveling at?

b) Joe travels 30 miles per hour for 4 hours. How far did Joe travel?

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36) State the final percent and final decimal for each:

a) Tax of 8% b) Sale of 20% c) Tip of 15%

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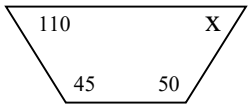
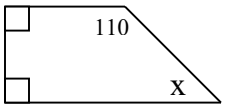
37) Find the missing angle of the quadrilateral

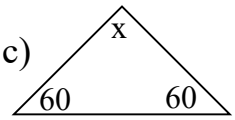
a)



b)



c)



d) Classify the triangle in letter c.

38) Define the following

a) Mean-

b) Median-

c) Mode-

d) Range-

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39) Using the formula $I = prt$, what would be the interest owed if you borrowed $3,200 at 9% interest for 3 years?

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40) The commission on a house is 2%. If an average home sells for $500,000. Find the commission.

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41) a) 24 is what percent of 96 b) 20 is 25% of what number

c) 30% of 120 is what number d) What is the discount for a $150 dress that is on sale for 20% off?

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42) A weight lifter lifted 220 lbs last meet and 263 lbs this meet. Find the percent of change. *(to the nearest thousandth).*

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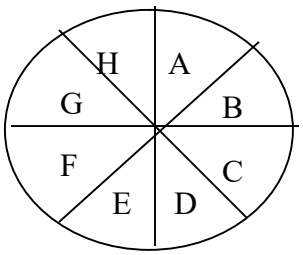
43) Nick bought a new baseball bat for $120. The tax was $10.80. What was the rate (%) of tax being charged?

44)

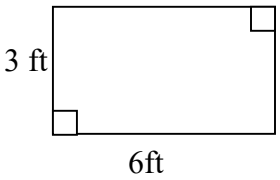


a) P (consonant and consonant) =

b) P(3 or lower on a dice) =

c) How many total outcomes if this spinner is spun and then the dice is rolled?

45) a) Find the Area and Perimeter



b) Draw #45a with a scale factor of $\frac{2}{3}$.

c) Find the Area and Perimeter of the new image.

46) In a scale model 1 inch represents 15 actual feet. If the model is 6.4 inches long, how long is the actual?

47) If the circumference of a circle is as follows, find the radius. $\boxed{C = \pi d}$

a) C = 12π

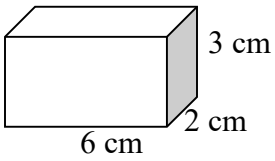
b) $C = 196\pi$

c) $C = 26\pi$

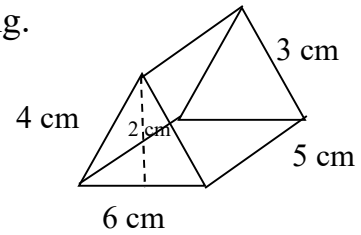
48) If the volume of a cube is 64 cubic inches, find the length of one edge.

49) Find the Surface Area and Volume of the following.

a)



b)



V= lwh SA=2lw+2lh+2wh V= (½ ab)h SA = ab + hb + hp + hs

50) There are 4 red marbles and 5 blue marbles. If two marbles are selected at random **without** replacement, what is the probability that both are red?

51) Find the unit price of the following:

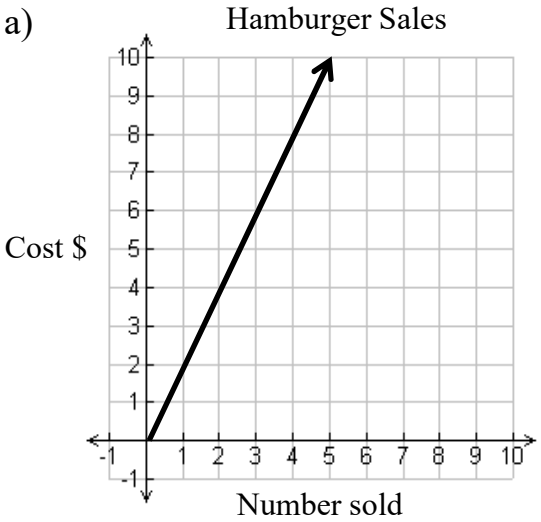
a) 5 pens for $1.25 b) 20 pens for $5.20 c) Which is the better deal?

52) Define the following:

a) Whole numbers b) Counting numbers c) Integers

53) Is the following proportional? If yes, find the unit rate.

a)

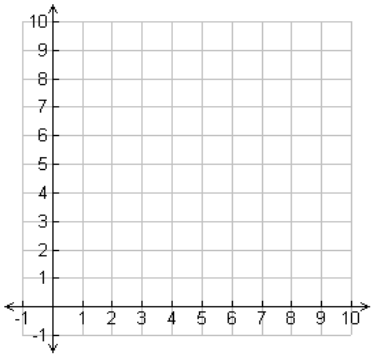


b)

Work hours	Number of homes
1	1.5
3	4.5
8	12
$13\frac{1}{2}$	20

54) Plot the following points on a coordinate grid. (2,3), (4,6), (6,9)

Find the constant of proportionality ____
What is the equation?_____



55) a) A dozen eggs sell for $2.40. How much is the cost per egg when sold separately?

b) If the cost per egg is 0.30, how much will you save buying a dozen eggs at once rather than buying them separately?

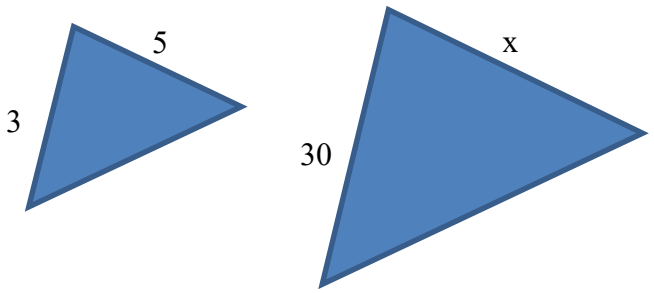
56) Trey can run 5 laps in 1/4 of an hour, how far can he run per hour?

57) Mrs. Kurka is baking cookies for the holiday and needs $1\frac{1}{4}$ cups of sugar for $2\frac{1}{2}$ batches of cookies. How much sugar calls for one recipe?

58) Solve the following proportions:

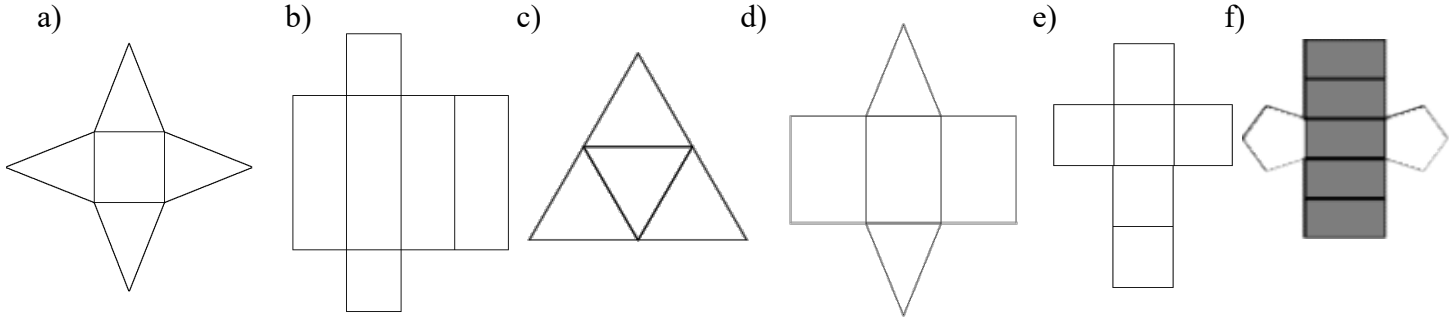
a) $\frac{3}{n} = \frac{18}{24}$ b) $\frac{2.4}{3.6} = \frac{x}{6}$ c) $\frac{4}{x+5} = \frac{2}{8}$

59) The corresponding sides of similar triangles are proportional. Find x.



60) Name the figure for the following nets:

a) b) c) d) e) f)



61) Name whether you would find the Area, Perimeter, Surface Area and Volume.

a) Which state is larger California or Michigan?

b) Which gift requires more wrapping paper?

c) Whose yard has more fencing?

d) Which container will hold more popcorn?

62) If the sides of a triangle are doubled (multiplied by 2), how does the perimeter change? Draw a picture.

63) Determine the Type of Sample (Stratified, systematic, or random):

a) Every fifth person who leaves a restaurant is asked how the service was.

b) Fifty men and 50 women were asked what their favorite TV show was.

c) A sample is chosen by using a computer program that gives every student an equal chance of being selected.

d) Forty names were drawn out of a hat and asked to take a survey.

e) A sample is grouped by grade-level.

64) For the following set of data, find the mean, median, mode, and range.

91, 93, 95, 95 , 95, 96, 97, 99, 40, 100

MEAN **MEDIAN** **MODE** **RANGE**

**Which number in the set of data above would be considered an outlier? _____

65) Box-Plots: Use the shown box-plot to answer the questions:

a) What is the greatest value?

b) What is the least value?

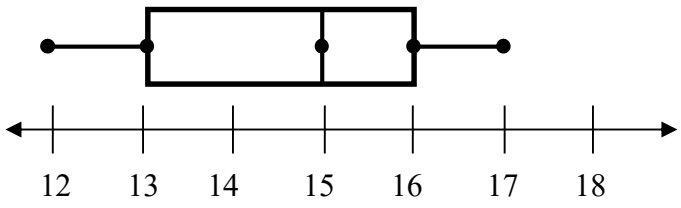
c) What is the range?

d) What is the median?

e) What is the upper quartile?

f) What is the lower quartile?

g) What is the interquartile range?

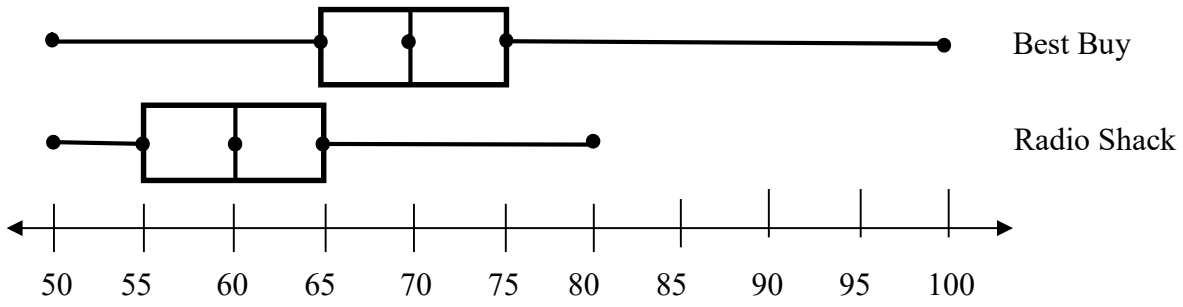


**REMEMBER:

MOST APPROPRIATE MEASURES		
		AT LEAST ONE SET IN NOT SYMMETRICAL
MEASURE OF CENTER		MEDIAN
MEASURE OF VARIATION		INTERQUARTILE RANGE

66) Find the Centers and Variations of the two populations. Write an inference.

COST OF IPODS



INFERENCE –

_____

_____

67) A company that produces car parts tests a sample of 500 parts. After testing all 500 parts, they find that 50 parts are defective.

a) What is the experimental probability of a part being defective?

b) What is the experimental probability of a part being functional?

c) How many defective parts would you expect in a batch of 5000 parts?

68) A T-Shirt company gives the following options for a customized shirt for Sachem students.

Color: White, Gold, Red or Black
Size: Small, Medium, or Large
Design: Embroidered or Spray Art

A) Construct a tree diagram, and list the sample space of all possible combinations

B) What is the probability the shirt will be Gold?

69) There are 3 black socks and 3 blue socks in a drawer. Once a sock is selected, it is <u>not replaced.</u> What is the probability of selecting 2 blue socks?

70) What is the experimental probability of rolling an prime number?

Number	1	2	3	4	5	6
Times Rolled	*9*	*7*	*14*	*5*	*7*	*8*