Henry/Heim

Name: _____ Class: _____ Date: _____ ID: C

FINAL EXAM Review

8th Math Review
2nd Semester
2016

Multiple Choice
Identify the choice that best completes the statement or answers the question.

____ 1. The table below shows adult ticket prices at the Six Flags Over Texas amusement park.

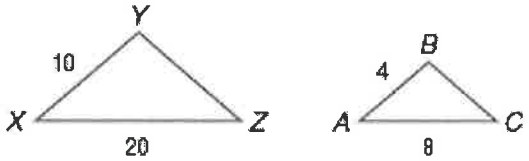
Six Flags Adult Ticket Prices

Year	Price
1965	$3.50
1975	$7.00
1985	$14.95
1995	$26.95
2005	$45.00

Based on the data, what is a reasonable prediction for the adult ticket price in 2015?

a. $48.00
b. $46.00
c. $120.00
d. $73.00

____ 2. Triangle *ABC* is a dilation of triangle *XYZ*.



What scale factor was used to reduce *XYZ* to *ABC*?

a. 2.5
b. 0.4
c. 0.8
d. 0.2

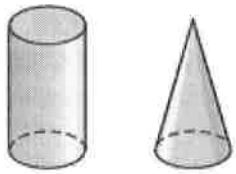
____ 3. The estimated populations of 6 towns are listed below.

48,000 23,000 27,000 25,000 28,000 24,000

Which measure of central tendency is the largest value?

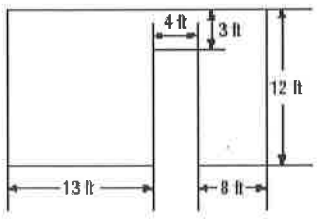
a. Mode
b. Median
c. Mean
d. Range

____ 4. The cone and the cylinder have the same base diameter and the same height. How many times more is the volume of the cylinder than the volume of the cone?



a. $\frac{1}{3}$
b. 3
c. $\frac{1}{2}$
d. 2

____ 5. Carol plans to put new carpeting in her house. The floor plan below shows the part of the house that will be carpeted. How many square feet of carpet does she need?



a. 300 ft^2
b. 264 ft^2
c. 252 ft^2
d. 336 ft^2

____ 6. A right triangle has a perimeter of 30 centimeters. The length of each side is increased to 5 times its original length. What is the perimeter of the larger triangle?

a. 60 cm
b. 90 cm
c. 300 cm
d. 150 cm

____ 7. A shipping company offers two sizes of boxes in the shape of rectangular prisms. The larger box has a volume of 408 cubic inches. The smaller box has length, width, and height dimensions that are half those of the larger box. What is the volume of the smaller box?

a. 51 in^3
b. 102 in^3
c. 3,264 in^3
d. 204 in^3

____ 8. Ellen can type 50 words per minute. Which of the following represents typing at the same rate?

a. 20 words in 30 seconds
b. 60 words in 70 seconds
c. 40 words in 40 seconds
d. 75 words in 90 seconds

____ 9. A root beer stand sells glasses of root beer in 3 different sizes. Antwan and his friends bought 2 small drinks for \$1.29 each, 2 medium drinks for \$1.49 each, and 3 large drinks for \$1.59 each. Which equation can be used to find a, the average price that they paid for a glass of root beer?

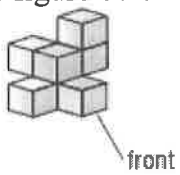
a. $a = \dfrac{(2 \times 1.29) + (2 \times 1.49) + (3 \times 1.59)}{7}$

b. $a = \dfrac{(2 \times 1.29) + (2 \times 1.49) + (3 \times 1.59)}{3}$

c. $a = \dfrac{1.29 + 1.49 + 1.59}{3}$

d. $a = \dfrac{1.29 \times 1.49 \times 1.59}{7}$

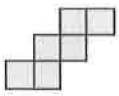
____ 10. The figure below shows a three-dimensional solid made of stacked cubes.



Which of the following represents the front view of the figure?

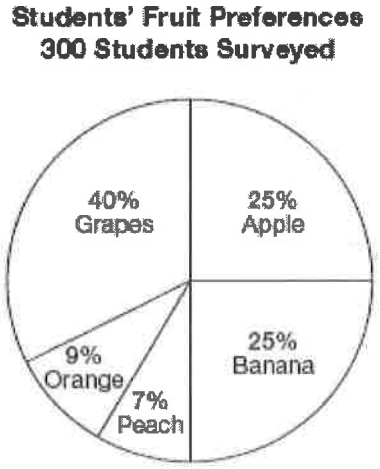
a. 

b. 

c. 

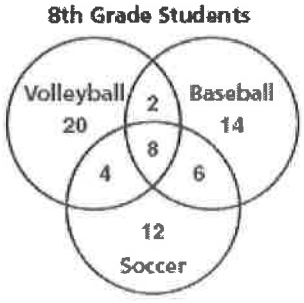
d. 

____ 11. Which statement best explains why a person reading the circle graph would get an incorrect idea about the number of students who prefer certain fruits?



a. The percentages for each section have a sum greater than 100.
b. The circle graph is missing a scale.
c. The section labeling is unclear.
d. The title is misleading.

____ 12. Ms. Nelson constructed a Venn diagram that shows the number of eighth-grade athletes who play volleyball, baseball, and soccer. Which phrase best identifies the number 2 shown in the diagram?

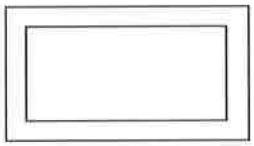


a. The total number of athletes who do not play soccer
b. The total number of athletes who do not play soccer or volleyball
c. The total number of athletes who play both baseball and volleyball, but not soccer
d. The total number of athletes who play all three sports

____ 13. In a number cube game, the object is to roll three 6's. If a player rolls three number cubes, what is the probability of rolling three 6's?

a. $\frac{1}{36}$
b. $\frac{1}{2}$
c. $\frac{1}{6}$
d. $\frac{1}{216}$

____ 14. Katie has a painting of the Alamo that she would like to frame. The painting is 14 inches long and 12 inches wide. If she puts a 3-inch frame around the painting, what will be the dimensions of the outside edge of the frame?



a. 11 in. × 9 in.
b. 20 in. × 18 in.
c. 17 in. × 15 in.
d. 28 in. × 24 in.

____ 15. Casey is making his grandmother's baklava recipe. He is making a batch that uses $\frac{3}{4}$ the amount of ingredients that the original recipe uses. If the recipe calls for $1\frac{1}{2}$ cups of sugar, how much sugar will Casey use?

a. $1\frac{1}{8}$ cups
b. 1 cup
c. $2\frac{1}{4}$ cups
d. $\frac{3}{4}$ cup

____ 16. The workers at a crayon factory can produce an average of 400 crayons every 5 minutes. At this rate, about how long will it take to produce 50,000 crayons?

a. 11 hours
b. 13 hours
c. 7 hours
d. 15 hours

____ 17. David is using a cardboard tube in the shape of a cylinder as part of his science project. He covers both ends of the cylinder. The volume of air in the cylinder is 24 cubic inches. David needs to make another cylinder for his project that has half the radius and length of the cardboard tube. What will be the volume of the second cylinder?

a. 8 in^3
b. 12 in^3
c. 3 in^3
d. 6 in^3

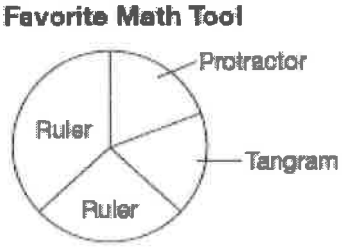
____ 18. Mr. Thomas asked his students to name their favorite math tool or object. The table below shows the results.

Favorite Math Tool or Object

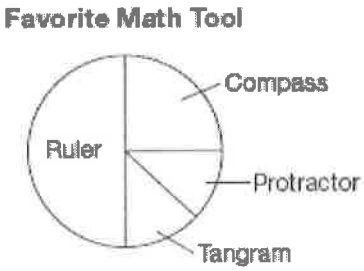
Tool or Object	Number of Students
Ruler	12
Compass	50
Protractor	25
Tangram	13

Which graph best represents the data?

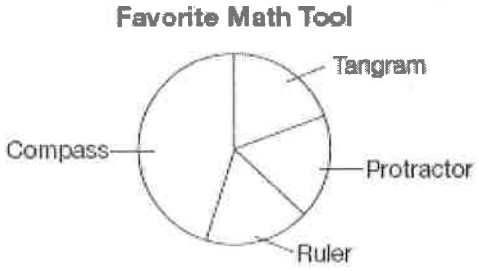
a.



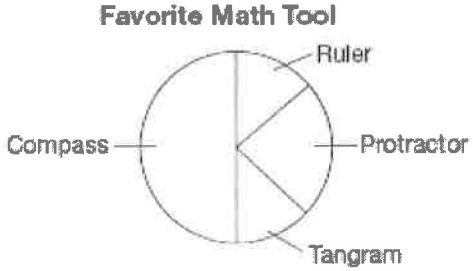
b.



c.



d.



____ 19. What is the measure of the larger of two complementary angles if the measure of one angle is five times the measure of the other angle?

a. 15°
b. 75°
c. 16°
d. 74°

____ 20. Sam, Megan, and Caroline scored a total of 46 goals during the soccer season. Megan scored 6 more goals than Sam. Caroline scored twice as many goals as Sam. Which is a reasonable conclusion about the goals scored by the players?

a. Megan and Caroline scored an equal number of goals.
b. Megan scored exactly half of the total goals.
c. Caroline scored the most goals.
d. Sam scored the most goals.

____ 21. The area of a square is 200 square meters. Which best represents the length of a side of the square?

a. 11.8 m
b. 10.4 m
c. 14.1 m
d. 20 m

____ 22. There are 40 newborn babies in the hospital nursery. For every 3 girls, there are 2 boys. How many newborn boys are in the nursery?

a. 12
b. 18
c. 7
d. 16

____ 23. Kyle is drawing the diagonal on a 9-inch by 13-inch rectangular sheet of paper. Approximately how long is the diagonal from corner to corner?

a. 11 in.
b. 13 in.
c. 25 in.
d. 16 in.

____ 24. The table shows the total number of diagonals in a convex polygon with n sides.

Number of Sides	4	5	6	n
Number of Diagonals	2	5	9	$\frac{1}{2}n(n-3)$

How many diagonals does an octagon have?

a. 20
b. 18
c. 16
d. 24

____ 25. The equation $c = 10 + .07m$ represents Quinn's monthly cell phone cost c, in dollars for m minutes of peak usage time. Which table reflects this equation?

a.

Monthly Cell Phone Cost

m	1000	2000	3000	4000
c	17	24	31	38

b.

Monthly Cell Phone Cost

m	10	20	30	40
c	7	14	21	28

c.

Monthly Cell Phone Cost

m	1	2	3	4
c	17	24	31	38

d.

Monthly Cell Phone Cost

m	100	200	300	400
c	17	24	31	38

____ 26. A micrometer is equal to 1×10^{-6} meter. Which expression represents this number in standard notation?

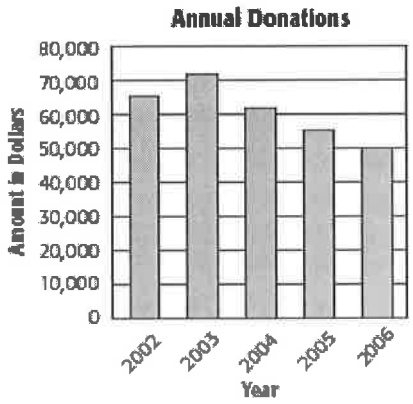
a. 0.0000001
b. 0.00001
c. 0.000001
d. 1,000,000

____ 27. The table below shows a company's charitable donations for the years 2002 to 2006.

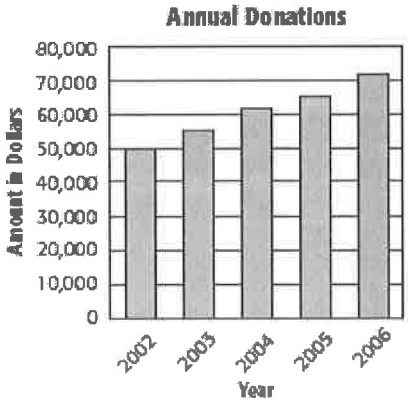
Year	Annual Donation
2002	$50,000
2003	$55,000
2004	$61,000
2005	$65,000
2006	$70,000

Which bar graph matches the data in the table?

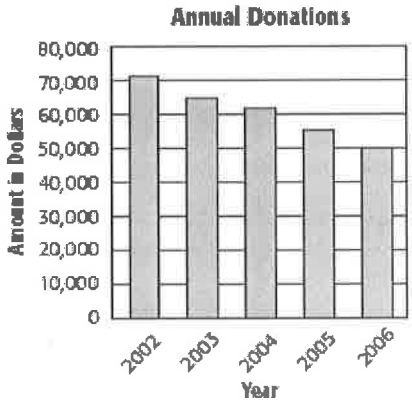
a.



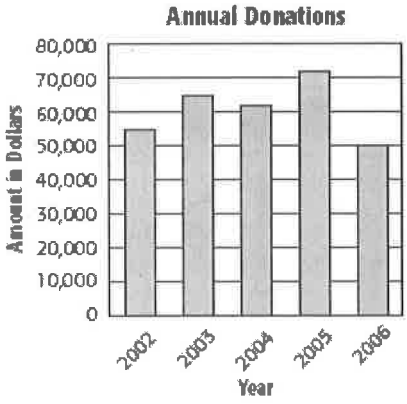
c.



b.



d.



____ 28. Rebecca wants to make a pencil case for her desk. She will cover the sides of a cylinder whose base has a diameter of 10 inches and whose height is 10 inches with contact paper. Approximately how much contact paper will Rebecca need to cover the sides of the cylinder?

a. 560 in^2
b. 1,000 in^2
c. 314 in^2
d. 471 in^2

____ 29. In the equation $5x + y = 30$, if an x-value is increased by 2, what would be the effect on the corresponding y-value?

a. The value of y will be $\frac{1}{2}$ as large.
b. The value of y will be 5 times as large.
c. The value of y will increase by 10.
d. The value of y will decrease by 10.

____ 30. Tonya's monthly grocery bills for the past four months were \$97.24, \$126.54, \$148.21, and \$88.20. She estimated that she spent a total of \$470.00 over the four months. Which best describes her estimate?

a. More than the actual amount, because she rounded to the nearest dollar.
b. Less than the actual amount, because she rounded to the nearest \$10.
c. Less than the actual amount, because she rounded to the nearest dollar.
d. More than the actual amount, because she rounded to the nearest \$10.

____ 31. Julia is creating a design for the library wall. The first 3 elements of the pattern are shown below.

If the pattern continues, what will be the total number of circles formed in the 5th element of the pattern?

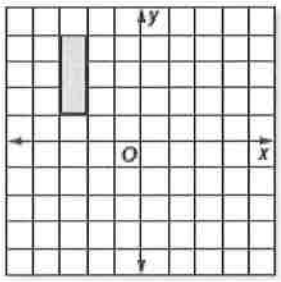
a. 121
b. 81
c. 336
d. 40

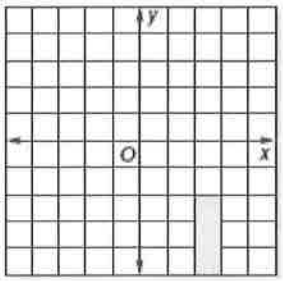
____ 32. The table below shows attendance at the library for preschool story time for the first four weeks of the year. Which of the following equations describes the data?

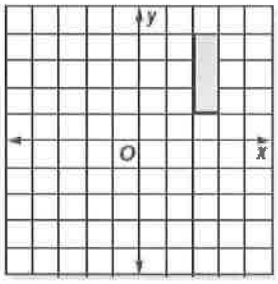
Week (w)	Number of Children (c)
1	55
2	70
3	85
4	100

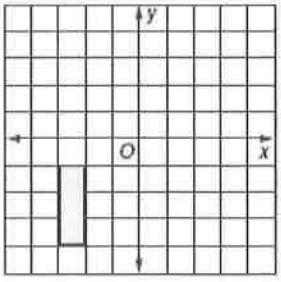
a. $c = 40w + 15$
b. $c = 15w + 40$
c. $c = 55w$
d. $c = 25w$

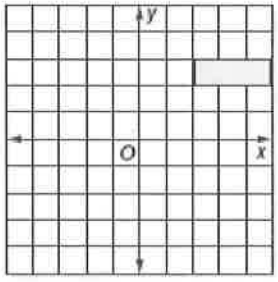
____ 33. Which of the following graphs shows the rectangle below reflected over the y-axis?



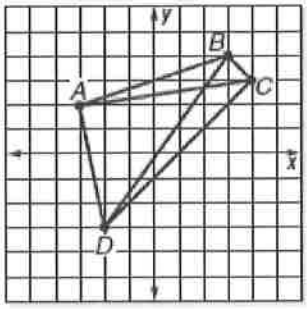
a.


c.


b.


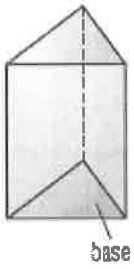
d.


____ 34. Which segment connects (3, 4) and (–2, –3)?



a. $\overline{AB}$
b. $\overline{AC}$
c. $\overline{BC}$
d. $\overline{BD}$

____ 35. The triangular base of the solid figure below has an area of 25 square inches. Which of the following formulas can be used to find the volume of the figure?



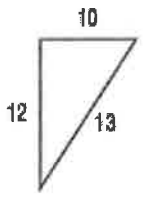
a. $V = \frac{4}{3}(25)h$
b. $V = \frac{1}{3}(25)h$
c. $V = 25h$
d. $V = 25Bh$

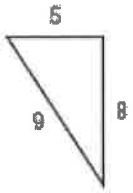
____ 36. Which of the following rational numbers is greater than $\frac{1}{8}$ and less than $\frac{1}{6}$?

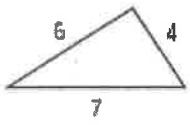
a. 0.145
b. 0.186
c. 0.113
d. 0.191

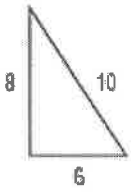
Name: _____ **ID: B**

____ 37. For which triangle does the relationship $a^2 + b^2 = c^2$ fit?

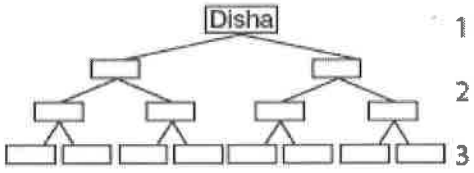
a. 

b. 

c. 

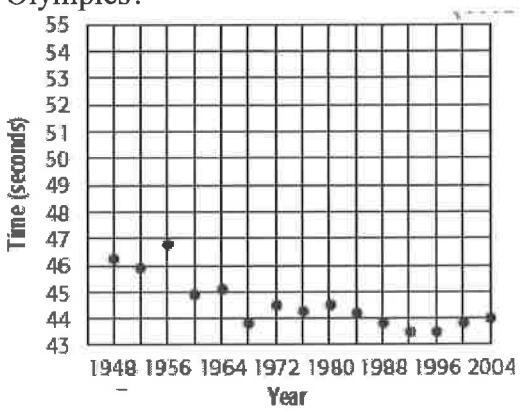
d. 

____ 38. Disha is researching her family tree. She has made a template for recording the names of her ancestors. How many people will be represented in the 5th generation before her?



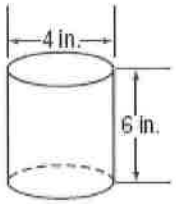
a. 24
b. 56
c. 32
d. 48

____ 39. The scatterplot below shows the winning times for the men's Olympic 400-meter run since 1948. Based on the data, which of the following is a reasonable prediction for the winning time in the 2012 Olympics?



a. 38.10 seconds
b. 46.50 seconds
c. 48.70 seconds
d. 43.80 seconds

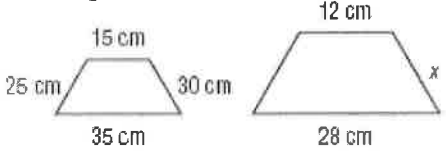
____ 40. Josh found the cylindrical can shown in his recycling bin. He plans to use it for a craft project and needs to cover the side and bottom with construction paper.



Approximately how many square inches of paper will Josh need if there is no overlap?

a. 150 in^2
b. 88 in^2
c. 75 in^2
d. 201 in^2

____ 41. These trapezoids are similar. What is the length of side x?



a. 20 cm
b. 18 cm
c. 24 cm
d. 15 cm

____ 42. Five women are all due to have babies in June. If the chances of having a boy or a girl are equal, and these events are independent of one another, what is the probability that all five women will have boys?

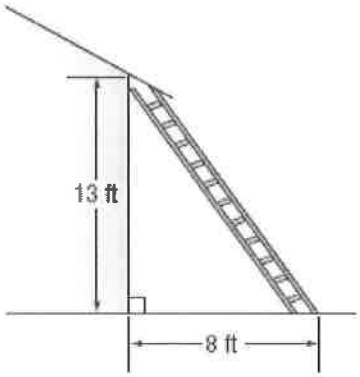
a. $\frac{5}{2}$
b. $\frac{1}{2}$
c. $\frac{1}{5}$
d. $\frac{1}{32}$

____ 43. Mary paid $4.20 for a sandwich, a cup of soup, and a soft drink. If the sandwich costs $1.95, what was the cost of the cup of soup?

What additional information is needed to solve this problem?

a. The size of the cup of soup
b. The cost of the soft drink
c. The total cost of the lunch
d. No additional information is needed.

____ 44. James needs to climb onto his roof to clean the gutters. The house is 13 feet tall at the lower edge of the roof. If he places the ladder 8 feet away from the base of the house, about how long must the ladder be to reach the lower edge of the roof?



a. 17–18 ft
b. 15–16 ft
c. 18–19 ft
d. 16–17 ft

____ 45. The Rosati family went out to dinner. The cost of the dinner was $38.00 before adding the tip. They want to leave a 15% tip. Which of the following represents the 15% tip?

a. $0.57
b. $15.00
c. $5.70
d. $11.40

____ 46. A T-shirt shop keeps records of how many shirts they sell. The most popular shirt colors from one week are shown in the table.

Color of Shirt	Number Sold
Red	26
Blue	32
Yellow	18
Purple	14
Gray	10

What is the probability that the next shirt purchased will be yellow?

a. 0.18
b. 0.32
c. 0.05
d. 0.08

____ 47. Scientists are studying a problem with too many fruit flies in an orchard. The following results were generated.

Day	1	2	3	4	5
Number of Fruit Flies	256	1,024	4,096	16,384	65,536

How can the data best be described?

a. The number of fruit flies increases by 4 daily.
b. The number of fruit flies doubles daily.
c. The number of fruit flies increases by a power of 2 daily.
d. The number of fruit flies quadruples daily.

____ 48. The chart below shows basketball shots attempted and made by four players on the team.

Name	Shots Attempted	Shots Made
Alan	16	5
Ben	12	7
Carter	10	4
Davin	9	4

Which of the following lists the players in order from highest to lowest percentage of shots made out of the shots attempted?

a. Alan, Carter, Davin, Ben
b. Davin, Carter, Ben, Alan
c. Ben, Carter, Alan, Davin
d. Ben, Davin, Carter, Alan

____ 49. Dominic wants to simulate random guessing on a 10-question True or False test. How can he best conduct this simulation?

a. Roll a die 10 times. Let even numbers be True and odd numbers be False.
b. Toss 3 coins 10 times. Let all heads be True and all Tails be False.
c. Ask his sister to say "True" or "False" 10 times.
d. Spin a 4-section spinner 10 times.

____ 50. Maria used a local telephone directory to randomly choose 8 people to survey about a new park. All 8 people said that they were in favor of the new park. Which is the best explanation for why her conclusion might not be valid?

a. The sample was not representative of all of the people in her town.
b. The survey was conducted by telephone.
c. The survey population was too large.
d. The sample size was too small.