

SESSION 1

This session contains 34 multiple-choice questions. Fill in the circle of your answer to each multiple-choice question.

You may **not** use a calculator during this session. You may use a ruler during this session.

Directions: Read each problem. Then fill in the circle of the best answer.

- 1** Ivan spins the arrow on this spinner once.



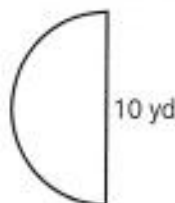
Which number is the arrow unlikely to land on?

- (A) 1
 - (B) 3
 - (C) 4
 - (D) 6
- 2** A parasail took two people up 750 feet and then lowered them 750 feet. Which statement is true about the change in height of the people after this occurs?
- (A) It changed by -1,500 feet.
 - (B) It changed by -750 feet.
 - (C) It changed by 0 feet.
 - (D) It changed by 750 feet.

- 3 Troy surveyed 10 of his friends from school about whether they preferred listening to pop music or country music. Pop music was preferred by 7 of his friends. Based on the results of his survey, Troy concludes that more than half of the students in his school will prefer listening to pop music over country music. Which statement best explains why Troy's conclusion is not valid?

- (A) He asked only students from his school.
- (B) He asked about only two music options.
- (C) He did not ask a random sample of students.
- (D) He did not ask any students in a music class.

- 4 This diagram represents a small stage in the shape of a semicircle.



What is the area, in square yards, of the stage?

- (A) 6.25π square yards
 - (B) 12.5π square yards
 - (C) 25π square yards
 - (D) 50π square yards
- 5 Nathan flips a fair coin 100 times. Which of the following best describes the expected number of times the coin would land with tails facing up?
- (A) exactly 2 times
 - (B) exactly 50 times
 - (C) approximately 2 times
 - (D) approximately 50 times

- 6 Bananas cost \$0.69 per pound. Which equation can be used to model the total cost, c , in dollars, of p pounds of bananas?
- (A) $c = 0.69p$
 - (B) $p = 0.69c$
 - (C) $c = 0.69 + p$
 - (D) $p = 0.69 + c$
- 7 The student council at Madison Middle School has 5 sixth graders, 5 seventh graders, and 5 eighth graders. One student council member will be selected at random to represent the school at a conference. What is the probability that the selected student council member will be in seventh grade?
- (A) $\frac{1}{3}$
 - (B) $\frac{1}{5}$
 - (C) $\frac{1}{7}$
 - (D) $\frac{1}{15}$
- 8 The numbers 5 and -3 are plotted on a number line. Which statement is true of the location of the sum $5 + (-3)$ on the number line?
- (A) It is 3 units from 0.
 - (B) It is 3 units from 5.
 - (C) It is 8 units from 0.
 - (D) It is 8 units from 5.

- 9 What is the decimal form of $\frac{8}{9}$?

(A) 0.88
(B) 0.89
(C) $0.\overline{88}$
(D) $0.8\overline{9}$

- 10  Use the inch side of your ruler to help you solve this problem.

The scale drawing below shows a wall with a window.



0.25 inch = 1.5 feet

Corbin plans to paint this wall. What is the total area of the wall, in square feet, that Corbin will paint?

(A) 3.5 square feet
(B) 56 square feet
(C) 126 square feet
(D) 135 square feet

- 11 Which expression has a positive product?

(A) $(6.3)(-0.8)(0.7)$
(B) $(-8.5)(-0.4)(-2.7)$
(C) $(-5)(-0.2)(-1.9)(9)$
(D) $(-1.3)(-4)(-7.6)(-3.5)$

- 12 Josh asked the students in his class in what season of the year they were born. The results are shown below:

- Winter: 6
- Spring: 3
- Summer: 5
- Fall: 10

What is the probability that a student in Josh's class has a birthday in winter or fall?

(A) $\frac{1}{2}$
(B) $\frac{3}{5}$
(C) $\frac{2}{3}$
(D) $\frac{3}{4}$

- 13 On Monday, the low temperature in Bristol was -5° Fahrenheit. On Tuesday, the low temperature was 14° Fahrenheit. How many degrees warmer was the low temperature on Tuesday than on Monday in Bristol?

(A) -19° Fahrenheit
(B) -9° Fahrenheit
(C) 9° Fahrenheit
(D) 19° Fahrenheit

- 14 Which expression is equivalent to $\frac{30xy - 24y}{6y}$?
- (A) $5x - 4$
 - (B) $5x - 4y$
 - (C) $5x - 24$
 - (D) $5xy - 24y$
- 15 A garden hose leaks $\frac{3}{8}$ gallon of water in $\frac{1}{4}$ hour. At this rate, how many gallons of water will the hose leak in 1 hour?
- (A) $\frac{3}{32}$ gallon
 - (B) $\frac{5}{8}$ gallon
 - (C) $1\frac{3}{8}$ gallons
 - (D) $1\frac{1}{2}$ gallons
- 16 What is the value of the expression $\frac{2}{3}\left(6 - \frac{5}{6}\right)$?
- (A) $3\frac{1}{6}$
 - (B) $3\frac{4}{9}$
 - (C) $4\frac{4}{9}$
 - (D) $4\frac{5}{6}$

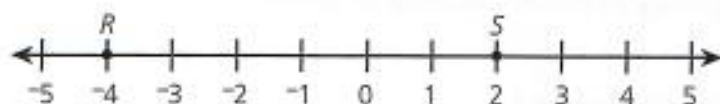
- 17** Carolyn swam 40 laps in half an hour. What is the unit rate that describes how fast Carolyn swims?

(A) 40 laps
(B) 80 laps
(C) 40 laps per hour
(D) 80 laps per hour

- 18** The two congruent sides of an isosceles triangle each measure $3b^2 + 2$ centimeters. The third side measures $4b - 5$ centimeters. What is the perimeter, in centimeters, of this triangle?

(A) $7b^2 - 3$ centimeters
(B) $10b^2 - 1$ centimeters
(C) $3b^2 + 4b - 3$ centimeters
(D) $6b^2 + 4b - 1$ centimeters

- 19** Points R and S are shown on this number line.



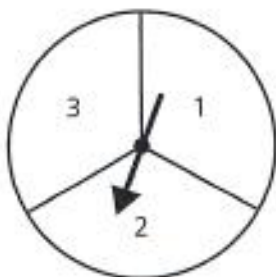
Which expression is equivalent to the distance between R and S ?

(A) $-4 + 2$
(B) $-4 - 2$
(C) $|-4 + 2|$
(D) $|-4 - 2|$

- 20** Mandy bought 5 computer games and a carrying case for a total of \$155. The carrying case cost \$15. Each computer game cost the same amount. What is the cost of each computer game?

(A) \$16
(B) \$28
(C) \$34
(D) \$46

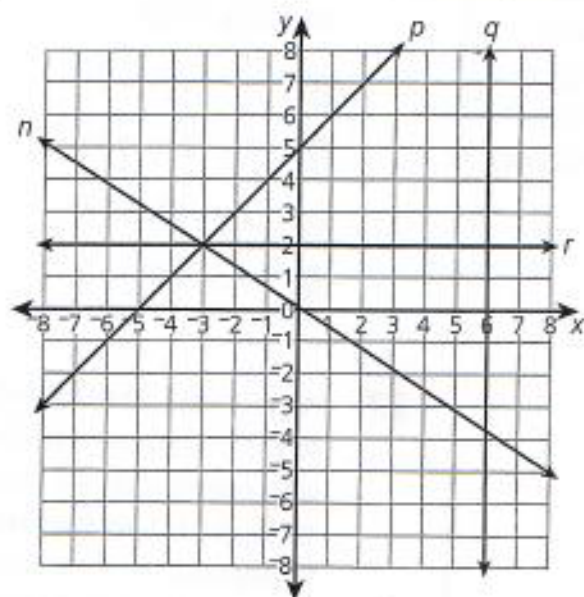
- 21** Vera spins the arrow on this spinner 30 times.



The arrow lands on the number 3 a total of 9 times. Which statement describes the frequency of the arrow landing on the number 3?

- (A) It happened 1 less time than expected.
(B) It happened 3 more times than expected.
(C) It happened 9 more times than expected.
(D) It happened the same number of times as expected.

- 22** Lines n , p , q , and r are shown on this coordinate plane.



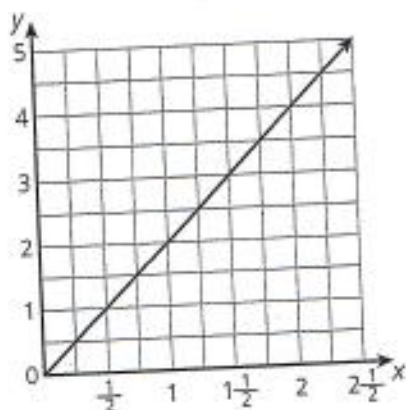
Which of these lines represents a proportional relationship?

- (A) line n
 - (B) line p
 - (C) line q
 - (D) line r
- 23** Xavier is 5.75 feet tall. Ron is $5\frac{7}{12}$ feet tall. Which statement is true?
- (A) Xavier is 0.7 foot taller than Ron.
 - (B) Ron is 0.7 foot taller than Xavier.
 - (C) Xavier is $\frac{1}{6}$ foot taller than Ron.
 - (D) Ron is $\frac{1}{6}$ foot taller than Xavier.

- 24** Sienna has a coupon for an additional 15% off her entire purchase at a store. She knows she can solve the expression $p - 0.15p$ to find her total cost. Which of the following expressions could Sienna also use to find her total cost?

(A) $0.75p$
 (B) $0.85p$
 (C) $1.15p$
 (D) $1.85p$

- 25** This graph shows a proportional relationship between x and y .



What number represents the unit rate for this relationship?

(A) $\frac{1}{2}$
 (B) 1
 (C) 2
 (D) $2\frac{1}{2}$

- 26** Which expression is equivalent to $3 \div (4.5 \times 2)$?

(A) $3 \times (4.5 \div 2)$
 (B) $3 \div (2 \times 4.5)$
 (C) $(3 \div 4.5) \times 2$
 (D) $(4.5 \times 2) \div 3$

- 27** Paige asked 30 random students in her school if they use the Internet to help with homework. Of these students, 18 students said they do use the Internet to help with homework. Based on the results of this survey, how many of the 480 total students in Paige's school could she predict use the Internet to help with homework?

(A) 144
 (B) 230
 (C) 288
 (D) 320

- 28** Eddie listened to $\frac{3}{4}$ of a podcast in $\frac{5}{6}$ hour. At this rate, how long will it take Eddie to listen to the entire podcast?

(A) $\frac{5}{8}$ hour
 (B) $\frac{9}{10}$ hour
 (C) $\frac{10}{9}$ hours
 (D) $\frac{19}{12}$ hours

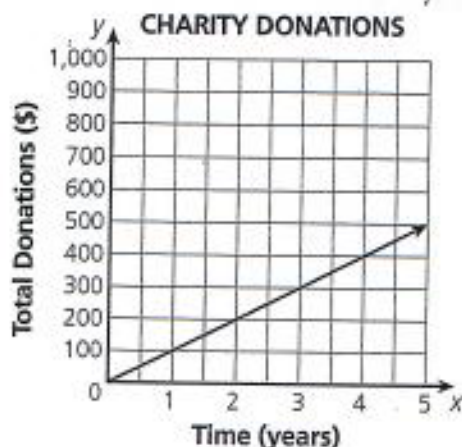
- 29** Peter had \$50 to spend at a fair. He spent \$15.20 on rides. He wants to buy some fudge that costs \$8 a pound to take home. Which inequality shows the maximum number of pounds of fudge, p , that Peter can buy with the money he has left?

(A) $p \leq 4.35$
(B) $p \geq 4.35$
(C) $p \leq 8.15$
(D) $p \geq 8.15$

- 30** Clarence rolls a 1–6 number cube twice. He wants to know the probability that he will roll a 5 on both rolls. Which statement is true?

(A) There is 1 favorable outcome out of 6 possible outcomes.
(B) There is 1 favorable outcome out of 36 possible outcomes.
(C) There are 2 favorable outcomes out of 6 possible outcomes.
(D) There are 2 favorable outcomes out of 12 possible outcomes.

- 31** Greta donates the same amount to a certain charity each year. This graph shows the relationship between the total amount she has donated and the number of years she has been making donations.



What does the point (1, 100) on the graph represent?

- (A) Every year Greta donates \$1.
(B) Every year Greta donates \$100.
(C) Every 10 years Greta donates \$1.
(D) Every 10 years Greta donates \$100.

32

A hairstylist earns a 25% commission on each haircut she does. One customer received a \$35 haircut and gave the stylist an 18% tip. What was the total amount the stylist earned on this haircut?

- (A) \$6.30
- (B) \$8.75
- (C) \$10.33
- (D) \$15.05

33

An office manager bought cases that each contained 12 reams of white paper. He also purchased 16 reams of different colored paper. If the office manager purchased 184 reams of paper in all, how many cases of white paper did he buy?

- (A) 12
- (B) 14
- (C) 15
- (D) 16

34

Which expression is equivalent to the expression below?

$$-5(x^2 + 3x) - 2x(x - 4)$$

- (A) $-3x^2 + 16x$
- (B) $-3x^2 - 16x$
- (C) $-7x^2 + 7x$
- (D) $-7x^2 - 7x$

SESSION 2

This session contains 34 multiple-choice questions. Fill in the circle of your answer to each multiple-choice question.

You may use a calculator and a ruler during this session.

Directions: Read each problem. Then fill in the circle of the best answer.

- 35** Vern bought 6 candles for \$8.50 each. He also bought a holder for the candles for \$12.75. What is the total amount Vern spent on the candles and the holder?

(A) \$27.25
(B) \$63.75
(C) \$85.00
(D) \$127.50

- 36** The number of pages Maria read in a book and the total time it took her to read them are shown in this table.

MARIA'S BOOK

Number of Pages Read	Total Time (minutes)
15	30
45	90
90	150
120	200

Which statement best describes Maria's reading rate?

- (A) It is constant because $\frac{15}{30} = \frac{45}{90}$.
(B) It is constant because $\frac{15}{30} = \frac{120}{200}$.
(C) It is not constant because $\frac{15}{30} \neq \frac{45}{90}$.
(D) It is not constant because $\frac{15}{30} \neq \frac{120}{200}$.

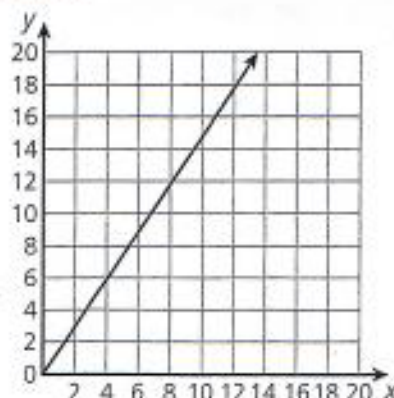
- 37** Ms. Roman spent \$210 to buy 3 jewelry boxes and 3 necklaces as gifts. Each jewelry box cost \$20. Each necklace cost the same amount. Which expression can be simplified to find the cost of each necklace?

(A) $210 \div 3 + 20$
(B) $210 \div 3 - 20$
(C) $(210 + 20) \div 3$
(D) $(210 - 20) \div 3$

- 38** Desmond rolls a 1–6 number cube and flips a fair coin. The coin lands either heads side up (H) or tails side up (T). Which of the following lists shows the sample space of possible outcomes?

(A) 1, 2, 3, 4, 5, 6, H, T
(B) 1HT, 2HT, 3HT, 4HT, 5HT, 6HT
(C) 1H, 1T, 2H, 2T, 3H, 3T, 4H, 4T, 5H, 5T, 6H, 6T
(D) 1HT, 1TH, 2HT, 2TH, 3HT, 3TH, 4HT, 4TH, 5HT, 5TH, 6HT, 6TH

- 39** The graph below shows the proportional relationship between x , the number of eggs used in an egg casserole, and y , the number of servings in the casserole.



Which equation describes the proportional relationship shown above?

(A) $y = \frac{3}{2}x$
(B) $y = \frac{2}{3}x$
(C) $y = \frac{3}{2}x + 1$
(D) $y = \frac{2}{3}x + 1$

- 40 Craig baked $4\frac{1}{2}$ batches of cookies. Each batch made 24 cookies. He put the cookies in bags containing 10 cookies each. Then Craig ate the leftover cookies that did not make a full bag. How many cookies did Craig eat?

(A) 8
(B) 6
(C) 5
(D) 4

- 41 Sebastian spun the arrow on a spinner 150 times. The results of each spin are shown in this table.

Result	Number of Times
1	25
2	39
3	36
4	30
5	20

Sebastian will spin the arrow on the spinner 50 more times. Based on these data, how many times is an odd number expected to result?

(A) 25
(B) 27
(C) 30
(D) 36

- 42** A group of 5 friends spent a total of \$18 on a bottle of juice and a package of dried fruit for each of them. Each juice cost \$1.25. Each package of dried fruit cost the same amount. What was the cost of each package of dried fruit?

(A) \$1.25
(B) \$2.35
(C) \$3.35
(D) \$3.85

- 43** The length of a hallway is $4\frac{1}{2}$ times as long as the width of the hallway. The length of the hallway is $16\frac{1}{2}$ feet. What is the width of the hallway?

(A) 5 feet
(B) 4 feet
(C) $3\frac{2}{3}$ feet
(D) $3\frac{1}{3}$ feet

- 44** Emma and Aailah simplify the same expression, as shown below.

Emma: $-5x + (2 + x) = -5x + x + 2 = -4x + 2$

Aailah: $-5x + (2 + x) = (-5x + 2) + x = -3 + x$

Who simplified the expression correctly?

(A) only Emma
(B) only Aailah
(C) both Emma and Aailah
(D) neither Emma nor Aailah

- 45** This table shows the relationship between the number of cups of popcorn, p , a popcorn machine pops and the time in minutes, t , the popcorn machine operates.

t	p
3	42
5	70
7	98
9	126

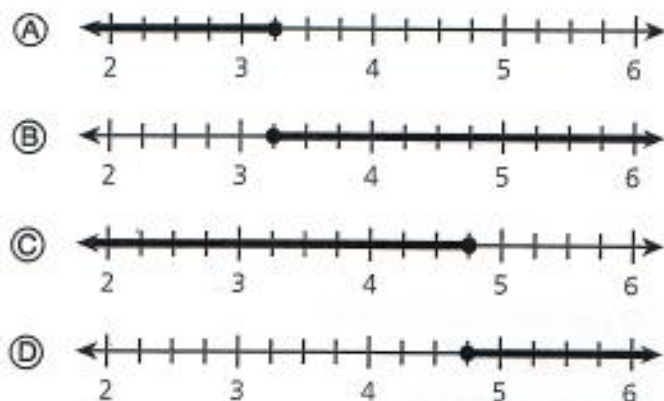
What is the unit rate, in cups per minute, at which this popcorn machine operates?


- (A) 9 cups per minute
 - (B) 14 cups per minute
 - (C) 18 cups per minute
 - (D) 28 cups per minute
- 46** Tara is a goalie for her soccer team. In the games she has played so far, she blocked $\frac{3}{5}$ of the balls from going into the goal. Tara will conduct a simulation by randomly selecting numbers to predict the number of balls she will block for the next attempts to make a goal. Which numbers can Tara use in her simulation to represent the balls she blocks and the balls she does not block?
- (A) blocks: 1, 2, 3
does not block: 4, 5
 - (B) blocks: 3
does not block: 5
 - (C) blocks: 1, 2, 3
does not block: 1, 2, 3, 4, 5
 - (D) blocks: 1, 2, 3
does not block: 4, 5, 6, 7, 8

- 47** Leo divides -20 by an integer, x , and the result is a rational number. Which statement is true of the possible values of x ?

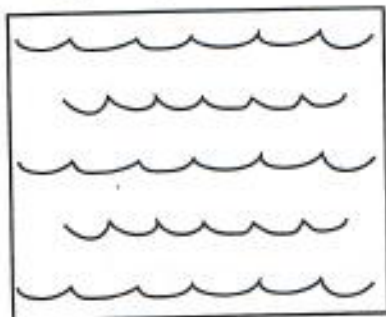
- (A) It could be any positive integer.
- (B) It could be any negative integer.
- (C) It could be any integer except 0.
- (D) It could be any integer except -20 .

- 48** Celeste drinks at least 8 cups of water each day. So far, she drank 1.5 cups of water. She will drink the rest of her water for the day from a water bottle that holds 2 cups of water. Which graph shows the minimum number of bottles worth of water Celeste should drink so that she drinks at least 8 cups of water?



- 49  Use the centimeter side of your ruler to help you solve this problem.

Look at this scale drawing of a pool.



The actual width of the pool is 20 meters. What is the actual length of the pool?

- (A) 4 meters
(B) 5 meters
(C) 16 meters
(D) 25 meters
- 50 Juliana has saved \$65 towards buying a \$200 electronic book reader. Starting this week, she plans to save an additional \$20 each week. Which inequality can be used to find the minimum number of weeks, w , it will take Juliana to save for the book reader?
- (A) $20w + 65 \leq 200$
(B) $20w + 65 \geq 200$
(C) $20(w + 65) \leq 200$
(D) $20(w + 65) \geq 200$

- 51 Which of the following expressions is equivalent to $-n(2 - k) + n(-2 + k)$?

(A) 0
(B) -1
(C) $-4n$
(D) $2n(k - 2)$

- 52 Mario reduced a picture that is 10 inches long by 8 inches wide using a photocopier. The reduced picture is now 6 inches long. By what scale factor did the photocopier reduce the picture?

(A) $\frac{3}{5}$
(B) $\frac{3}{4}$
(C) $\frac{4}{3}$
(D) $\frac{5}{3}$

- 53 What is the value of the expression $\frac{4}{5} - \left(-\frac{2}{5} + \frac{3}{10}\right)$?

(A) $\frac{7}{10}$
(B) $\frac{9}{10}$
(C) $1\frac{3}{10}$
(D) $1\frac{5}{10}$

- 54 Katya is decorating cylindrical vases by gluing a piece of ribbon around them, as shown below.



Each vase has a radius of 6 centimeters. Katya must decorate 15 vases to use at a banquet. What is the total amount of ribbon, to the nearest tenth of a centimeter, that Katya will need to decorate these vases?

(A) 282.7 centimeters
(B) 565.5 centimeters
(C) 1,131.0 centimeters
(D) 1,696.5 centimeters

- 55** Eva thinks the relationship shown in this table is proportional.

x	y
-4	2
-2	1
0	0
2	-1

Which statement best describes whether or not Eva is correct?

- (A) She is not correct because the slope is negative.
 - (B) She is correct because all y -values decrease by 1.
 - (C) She is not correct because the slope is not equal to 1.
 - (D) She is correct because the points are part of a line through $(0, 0)$.
- 56** Leslie ran $4\frac{1}{2}$ laps around the park in $\frac{3}{4}$ hour. Kayla ran $3\frac{1}{2}$ laps around the same park in the same amount of time. How many more laps around the park can Leslie run in one hour than Kayla at these rates?

- (A) $\frac{3}{4}$
- (B) 1
- (C) $1\frac{1}{3}$
- (D) 2

- 57 Ally's bike cost d dollars. Ted's bike cost 15% less than Ally's bike. Which expression represents the cost, in dollars, of Ted's bike?

(A) $0.15d$
(B) $d - 0.15$
(C) $0.15d - d$
(D) $d - 0.15d$

- 58 Mr. Gonzalez wants to buy some 20-pound bags of mulch. He also needs a 25-pound bag of potting soil. He does not want to load more than 200 pounds into the trunk of his car. What is the greatest number of bags of mulch that Mr. Gonzalez can buy?

(A) 8
(B) 9
(C) 11
(D) 12

- 59 A pizzeria offers the special described below:

Buy 1 Large Cheese Pizza for \$12.50,
Get the 2nd for $\frac{1}{2}$ Off!

Customers must pay 4% sales tax on all pizzas. What is the cost, including tax, for 2 large cheese pizzas?

(A) \$26.00
(B) \$19.50
(C) \$19.25
(D) \$13.00

- 60 The rent charged for offices in a building is proportional to the area of the office. The monthly rent for one office with an area of 1,800 square feet is \$1,200. Mr. Halloran pays \$18,000 each year for another office in this building. What is the area, in square feet, of the office Mr. Halloran rents?

(A) 1,000 square feet
(B) 1,500 square feet
(C) 2,250 square feet
(D) 2,700 square feet

- 61** Agnes and Brianna work at a stand selling small and large wallets.

- Small wallets cost \$8 each.
- Large wallets cost \$10 each.
- Agnes sells 5 small wallets and some large wallets for a total of \$100 in sales.
- Brianna sells no small wallets and twice as many large wallets as Agnes.

How many dollars in sales does Brianna make?

- (A) \$60
- (B) \$100
- (C) \$120
- (D) \$200
- 62** Cleo pays \$100 toward her credit card bill each month. This month, she increases the amount she pays by a certain percentage. Next month, she plans to decrease the amount she pays this month by that same percentage. Which statement is true of the amount Cleo plans to pay on her credit card bill next month?
- (A) It is less than \$100.
- (B) It is equal to \$100.
- (C) It is greater than \$100.
- (D) It depends on the percentage amount.

- 63** Drake collected data on the number of customers who ordered the chef's specials at two different restaurants last week. The data is shown in this table.

CHEF'S SPECIALS ORDERED

Restaurant	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
X	10	32	20	13	30	35	35
Y	28	30	25	30	45	50	44

Drake predicts which restaurant will have more customers who order the chef's specials next week. Which statement is most reasonable based on the data?

- (A) More will order from Y than from X since the mean for Y is greater.
 - (B) More will order from Y than from X since the median for Y is greater.
 - (C) The same number will order from X and from Y since the ranges are the same.
 - (D) The same number will order from X and from Y since the medians are the same.
- 64** Donald earns the same commission rate on all sales he makes each month. Last month, he earned \$750 in commission on \$9,000 in sales. In the first half of this month, Donald made \$6,400 in sales. How much more in sales must he make in order to earn \$1,000 in commission?
- (A) \$2,600
 - (B) \$3,000
 - (C) \$5,600
 - (D) \$6,400

- 65** The numbers of calories in the five top-selling sandwiches at two sandwich shops are shown below.

SANDWICH CALORIES

Sal's Subs	Bert's Bites
350	500
600	400
375	425
550	525
375	400

Which statement about the sandwich calories at each sandwich shop is true?

- (A) The mean for Sal's Subs is less than the mean for Bert's Bites.
 - (B) The mean for Sal's Subs is greater than the mean for Bert's Bites.
 - (C) The mean standard deviation for Sal's Subs is less than the mean standard deviation for Bert's Bites.
 - (D) The mean standard deviation for Sal's Subs is greater than the mean standard deviation for Bert's Bites.
- 66** A hamster on a wheel was tracked as running $\frac{3}{10}$ mile in $\frac{1}{4}$ hour. What was the hamster's speed in miles per hour?
- (A) $\frac{3}{5}$ mile per hour
 - (B) $\frac{5}{6}$ mile per hour
 - (C) $\frac{6}{5}$ miles per hour
 - (D) $\frac{5}{3}$ miles per hour

- 67** T-shirts at a gift shop cost \$12.50 each. Mrs. Eckert buys 4 medium T-shirts and some small T-shirts for her grandchildren. If she spends a total of \$87.50, how many small T-shirts did Mrs. Eckert buy?

(A) 3
(B) 4
(C) 7
(D) 11

- 68** The amounts in four investment accounts and the interest rates the accounts are earning are shown in the table below.

Account	Principal (\$)	Interest Rate (%)
A	850	1.8
B	900	1.6
C	700	2.1
D	750	1.9

If no additional money is deposited in any of these accounts, which account will earn the most interest in one year?

(A) account A
(B) account B
(C) account C
(D) account D



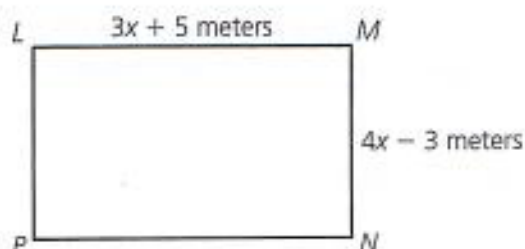
SESSION 3

This session contains six short constructed-response items and four extended constructed-response items. Write your answers in the spaces provided.

You may use a calculator during this session.

Directions: Read each part of the problem. Then write the answer to each part.

- 69** Rectangle $LMNP$ is shown below.



Part A: What is the perimeter, in meters, of rectangle $LMNP$?

Answer: _____ meters

The perimeter of rectangle $QRST$ is the same as the perimeter of rectangle $LMNP$. The length of rectangle $QRST$ is $2x + 9$ meters.

Part B: What is the width, in meters, of rectangle $QRST$?

Show your work.

Answer: _____ meters

- 70** Wyatt earned \$316.50 each week for the first 3 weeks of February and \$425.25 the last week of February.

Part A: How much money did Wyatt earn in all in February?

Show your work.

Answer: \$_____

Of this money, Wyatt used \$1,024.87 to pay bills and spent \$89.35 to buy a new coat. He put the rest of the money into his savings account.

Part B: How much money did Wyatt put into his savings account?

Show your work.

Answer: \$_____

71 Mr. Gorman spent \$65 on the following art supplies.

- 5 pads of colored paper for \$2.50 each
- 6 packs of markers for \$5.75 each
- some jars of paint for \$4.50 each

Part A: How many jars of paint did Mr. Gorman buy?

Show your work.

Answer: _____ jars of paint

Later, Mr. Gorman spent \$18 on some paintbrushes and colored pencils.

- He bought 4 times as many colored pencils as paintbrushes.
- Each paintbrush cost \$3 and each colored pencil cost \$0.75.

Part B: How many colored pencils did Mr. Gorman buy?

Show your work.

Answer: _____ colored pencils

- 72** A total of 60 students in Brooke's school are taking a Spanish class this year. This is 25% more than the number of students who took a Spanish class last year.

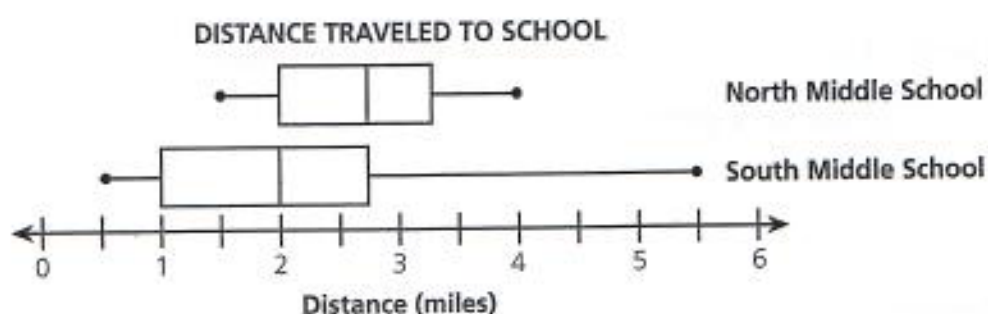
Part A: How many students took a Spanish class last year?

Show your work.

Answer: _____ students

Part B: If the number of students taking a Spanish class next year decreases by 25% of students this year, would the same number of students be taking a Spanish class next year as last year? Explain why or why not.

- 73** Dominic asked a random sample of students in North Middle School and South Middle School how far they travel to school. His results are shown in the box plots below.



Part A: Which school's students have the greater variability in distance they travel to school? Explain how you know.

Part B: Which school's students typically have the greater distance to travel to school? Relate your reasoning to measures of center or measures of variability.

74

A contractor uses the expression $7(x + 3)$ to find the length, in feet, of chain that he needs for a certain project.

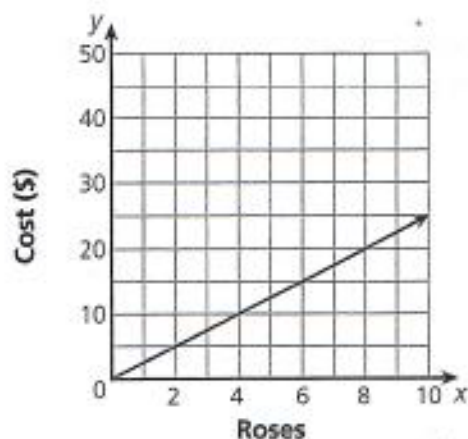
Part A: The contractor needs four chains that are this length. What is the total length of all of the chains?

Show your work.

Answer: _____ feet

Part B: The contractor needs another chain that is 50% longer than the first chain. Write an expression he can use to find the length of this chain. Explain how you know your expression is correct.

- 75** This graph shows the relationship between the number of roses bought at a flower shop and the total cost, in dollars, of the roses.



Part A: What does the point (8, 20) represent on this graph?

Answer: _____

Part B: What is the unit rate represented by this graph?

Answer: _____

Part C: Write an equation that can be used to find the total cost, y , in dollars, of x roses.

Answer: _____

76

Mrs. Chang spent \$44 for a movie ticket and a snack for each of her 4 children. Each snack cost \$3.50. Each movie ticket cost the same amount.

One of Mrs. Chang's children wrote this incorrect equation to find x , the cost in dollars, of each movie ticket.

$$4x + 3.50 = 44$$

Part A: Explain why this equation is incorrect.

Part B: Write a correct equation that can be used to find x .

Answer: _____

Part C: Solve the equation you wrote in Part B to find the cost of each movie ticket.

Show your work.

Answer: \$ _____

- 77** A new book comes out in paperback. The paperback version sells for 40% less than the hardcover version.

Part A: If the price of the hardcover version is \$24.99, what is the cost of the paperback version?

Show your work.

Answer: \$_____

In a shipment of paperback books, several are damaged. The bookstore can choose to return the books and receive $\frac{1}{3}$ of the selling price as credit. The bookstore can also try to sell the books for $\frac{1}{2}$ of the selling price.

Part B: If 22 books were damaged, how much more money would the store take in by selling all of the damaged books instead of returning them?

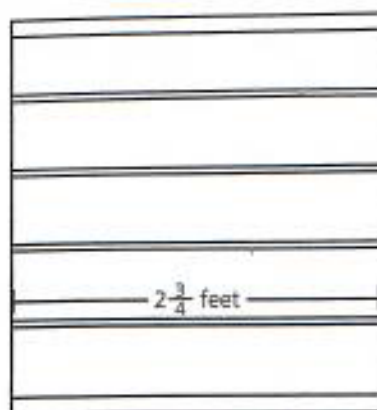
Answer: \$_____

One day, the store sells 3 hardcover copies, 8 paperbacks, and 3 of the damaged books. The next day, the store sells 4 hardcover copies, 5 paperbacks, and 8 damaged books.

Part C: A store employee estimates that the store brought in about \$20 more with this book on the second day. Explain whether or not the employee is correct.

78

A bookcase has 5 shelves as shown below.



Part A: How many total feet of space are available for books on these shelves?

Answer: _____ feet

A set of 35 reference books will be placed on the shelves. As many reference books as possible will be placed on each shelf. Each reference book is $\frac{1}{4}$ foot wide.

Part B: How many shelves will be used for the reference books?

Show your work.

Answer: _____ shelves

Part C: How many feet of unused shelf space will be left in the bookcase after all reference books are on the shelves? Show your work or explain how you know.
