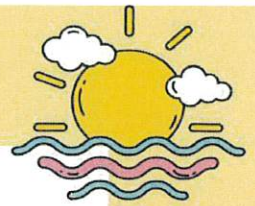
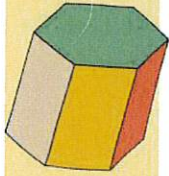


Entering Algebra Summer Math Maintenance



Dear Parents,

Summer is nearly here - hooray! While we look forward to a summer of rest and relaxation, we want to ensure that our students do enough math review and practice to keep their skills sharp for the fall! The purpose of this packet is to make sure you have options that will work for you and your child(ren). Teachers will test students at the beginning of the year on the topics listed under "Required Skills." Furthermore, although teachers will not be collecting math work from students in the fall, students are encouraged to keep up their arithmetic skills, review math concepts, and continue to explore other topics they are interested in. Intentionally incorporating math into daily activities will promote student success in the new school year. Have a wonderful summer!



Required Skills: (WILL BE TESTED IN THE FALL)

Students will be expected to complete computations with all rational numbers, including order of operations. 5-10 minutes of practice per day can make a big difference. A variety of practice options are provided in this list.

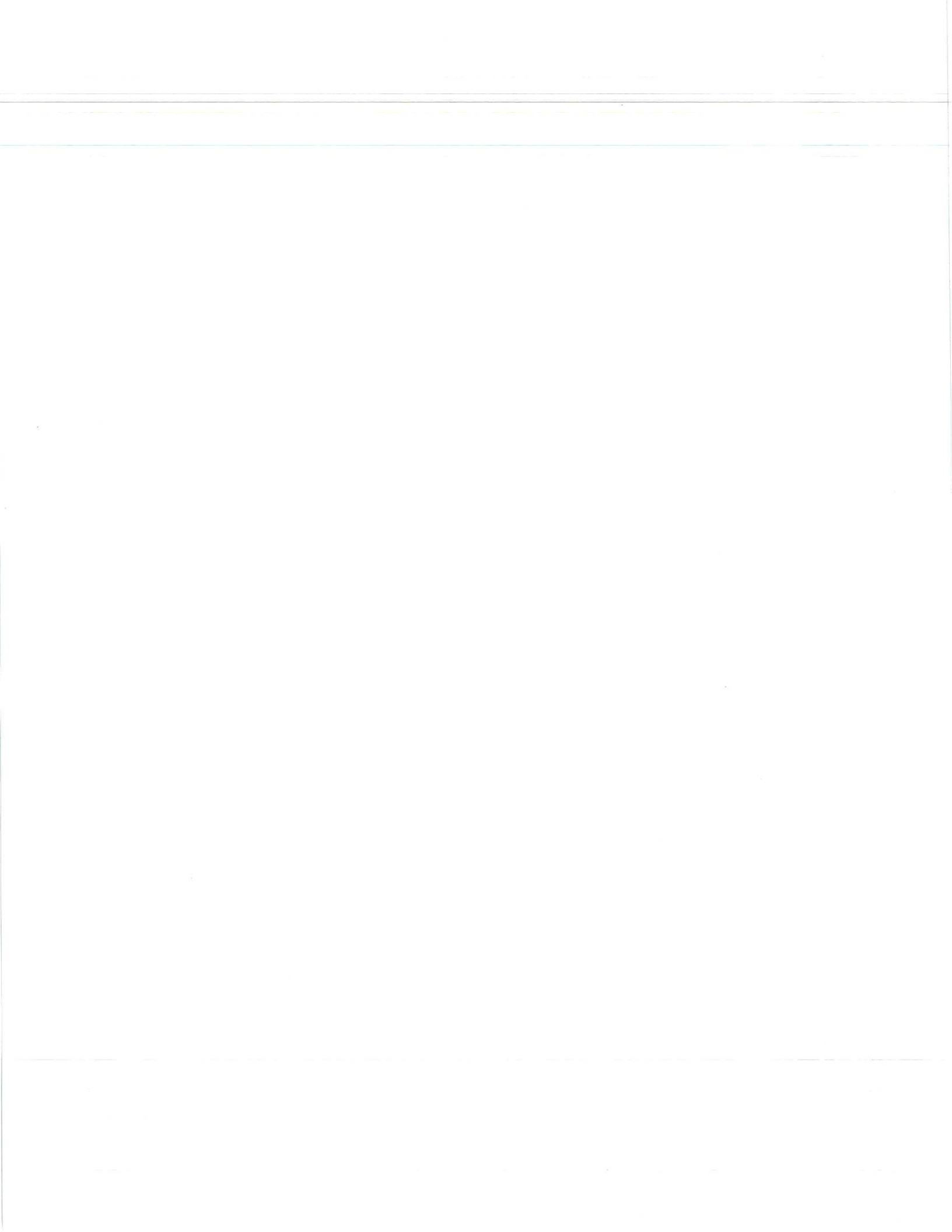
Skills to review before Algebra:

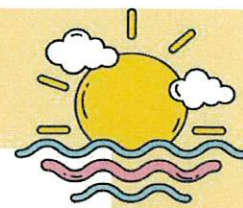
- Operations with rational numbers
- Order of operations
- Simplifying variable expressions
- Solving multi-step equations and inequalities
- Basic exponent rules (laws of exponents)
- Irrational numbers
- Linear functions
- Percents and applications
- Ratios and rates
- Probability

Tech Free Resources:

- Students will receive a hard copy math packet from their current math teacher with an answer key. Students are strongly encouraged to complete it.
- Math review workbooks. Some options below:
 - Spectrum Math - Grade 7 (ISBN 978-0769636979)
 - Spectrum Enrichment Math - Grade 7 (ISBN 978-0769663371)
 - Summer Skills - Summer Math Sharpener 7th Grade (<https://www.summerskills.com>)





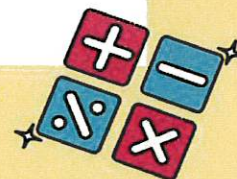
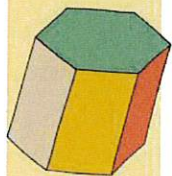


Online Resources:

- **IXL** (www.ixl.com): IXL is a website that provides a wide variety of practice problems and explanations. Families may purchase a monthly subscription (\$13-\$20 monthly). With an account the student receives targeted practice in weak areas. Exercises for students entering Algebra can be found in the 8th grade section of the website.
- **Khan Academy** (www.khanacademy.org): free; provides step by step instructions and practice problems covering a wide variety of topics with video explanations of topics if the student is confused and needs a refresher. You can create a free account to track progress. Students should review Khan Academy's 7th grade math and 8th grade math courses.
- **Arcademics** (www.arcademics.com/games): free (optional subscription adds data analysis); provides games covering arithmetic, ratios, time, decimals, and fractions.
- **Mathigon** (www.mathigon.org): free; interactive fun practice and exposure to mathematical concepts. Great problem solving activities and multiplication practice. The flashcards provide fluency practice with visual models.
- **Math Playground** (www.mathplayground.com): free; math games providing good fluency practice. Website was developed by a teacher
- **Puzzle Playground** (<https://www.puzzleplayground.com>): free; same developer as Math Playground but focusing on logic puzzles.
- **Primary Games - Math Flashcards** (<https://www.primarygames.com/math/flashcards>): free flashcards for fluency practice, including multiplication facts.
- **Buzz Math** (www.buzzmath.com): free 30 day trial

Apps:

- **iDevBooks: Long Division, Long Multiplication, Order of Operations, and Fraction Math**: apps for practicing arithmetic skills
- **Math Board**: Great for drilling math facts.
- **Quick Math+ - Multiplication Table and Arithmetic Game**: Good practice for math facts while trying to beat the clock.





Name _____

Find the greatest common factor (GCF) and least common multiple (LCM).

1. 36 and 48

2. 26 and 39

3. 12 and 35

Order from least to greatest.

4. $-\frac{4}{9}, -\frac{6}{11}, -\frac{2}{7}$

5. 50.53, 50.05, 5.05, 55.3

6. $\sqrt{40}, \frac{17}{3}, 5.9$

Simplify.

7. $\frac{3(85 - 4)}{9} - \frac{(-5)^3 + 5}{5}$

8. $(\frac{5}{6} \cdot \frac{3}{5})^2 - 2 + \frac{2}{7}(-\frac{7}{8})$

9. $\sqrt{3.24} + (0.05)^2$

Multiply or divide.

10. $(2.6 \times 10^4)(6.4 \times 10^8)$

11. $\frac{3.45 \times 10^9}{1.25 \times 10^3}$

12. $(8.86 \times 10^{-4})(4.3 \times 10^2)$

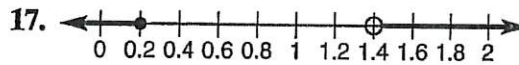
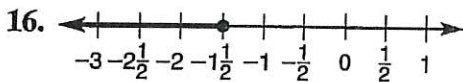
Solve.

13. $\frac{1}{2}(m + 4) = -\frac{3}{4}$

14. $|\frac{r}{4} + 5| = 18$

15. $-2\frac{1}{2}y + y > -8 + 18$

Write an inequality or compound inequality for each graph.

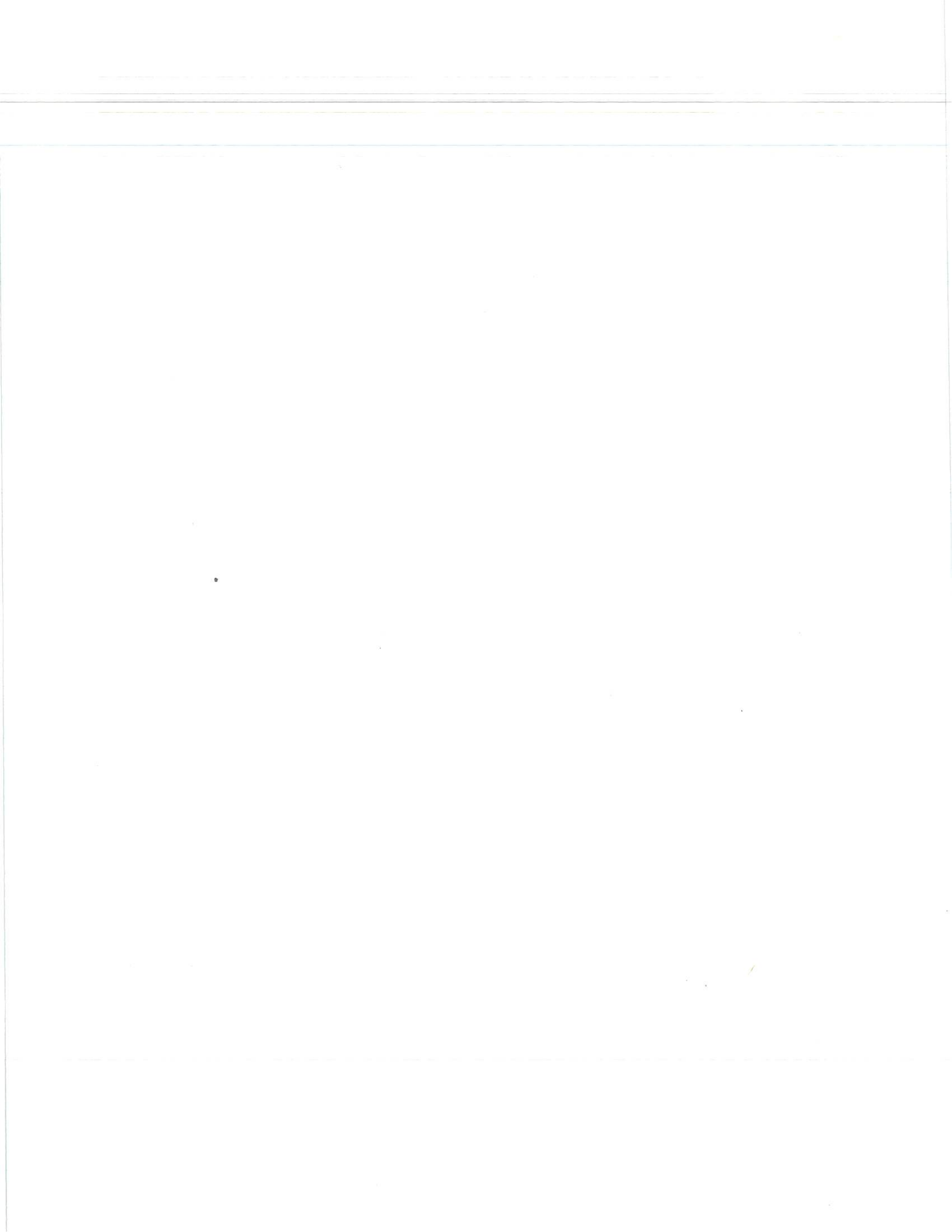


Rename each decimal as a fraction or mixed number in lowest terms.

18. $0.\overline{26}$

19. $3.0\overline{9}$

20. $1.\overline{123}$



Find the sum or product. Write each answer in standard form.

21. $(7x^3 - 2x^2) + (-2x^3 + 8x)$

22. $-3x^4(4x^5y^2 - 6xy^3 + 9)$

23. $(3x + 5)(5x - 2)$

Use the given information to write an equation of the line in slope-intercept form.

24. slope $m = \frac{9}{10}$ with
point $(-3, 2)$

25. contains points $(-8, 3)$
and $(5, 5)$

26. ~~Perpendicular to the line
 $-6x + 2y = 15$, and passes
through point $(0, 8)$~~

Solve for x .

27. $\frac{3x + 2}{8} = \frac{9}{5}$

28. $\frac{\$8.16}{3 \text{ lb}} = \frac{x \text{ dollars}}{1 \text{ oz}}$

29. scale: 10 cm : x mi
scale measure: 4.5 cm
actual measure: 180 mi

Find the missing value.

30. 124% of 42 is
what number?

31. 76 is what percent of
15,200?

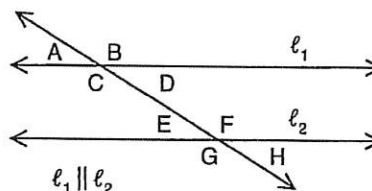
32. 14 is 35% of
what number?

33. Price: \$345.60
Tax Rate: 7.5%
Sales Tax: ?

34. Original: 64.45
New: 77.34
Percent change: ?

35. Simple interest: \$163.80
Rate: 4.2%
Time: 18 months
Principal: ?

Use the diagram at the right to answer questions 36–38.



36. Which pairs of angles are
corresponding angles?

37. Which pairs of angles are
alternate interior angles?

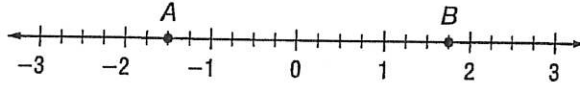
38. If $m\angle A = 43^\circ$, what
is $m\angle C$?

Quarterly Test 1

Free Response

Name _____

Use the number line. Write a rational number for each.



1. the additive inverse of point A

2. a decimal that corresponds to point B

Find the greatest common factor (GCF) and least common multiple (LCM) for each.

3. 8 and 36

4. 10 and 16

5. 12 and 56

Compare. Write $<$, $=$, or $>$.

6. $\frac{3}{4}$ _____ $\frac{5}{7}$

7. -21 _____ -9.3

8. 18 _____ -32.4

9. $2\frac{4}{5}$ _____ 2.834

Estimate. Then find the actual answer.

10. $-2\frac{3}{16} + 5\frac{6}{8}$

11. $-1.5 \div (-\frac{1}{4})$

12. $3.45(-\frac{3}{5})$

Simplify.

13. $y^2 \cdot y^3 \cdot y^5$

14. $(a^2)^4$

15. 4^{-2}

16. $26 \div (3.8 - 1\frac{1}{5}) + 3^2$

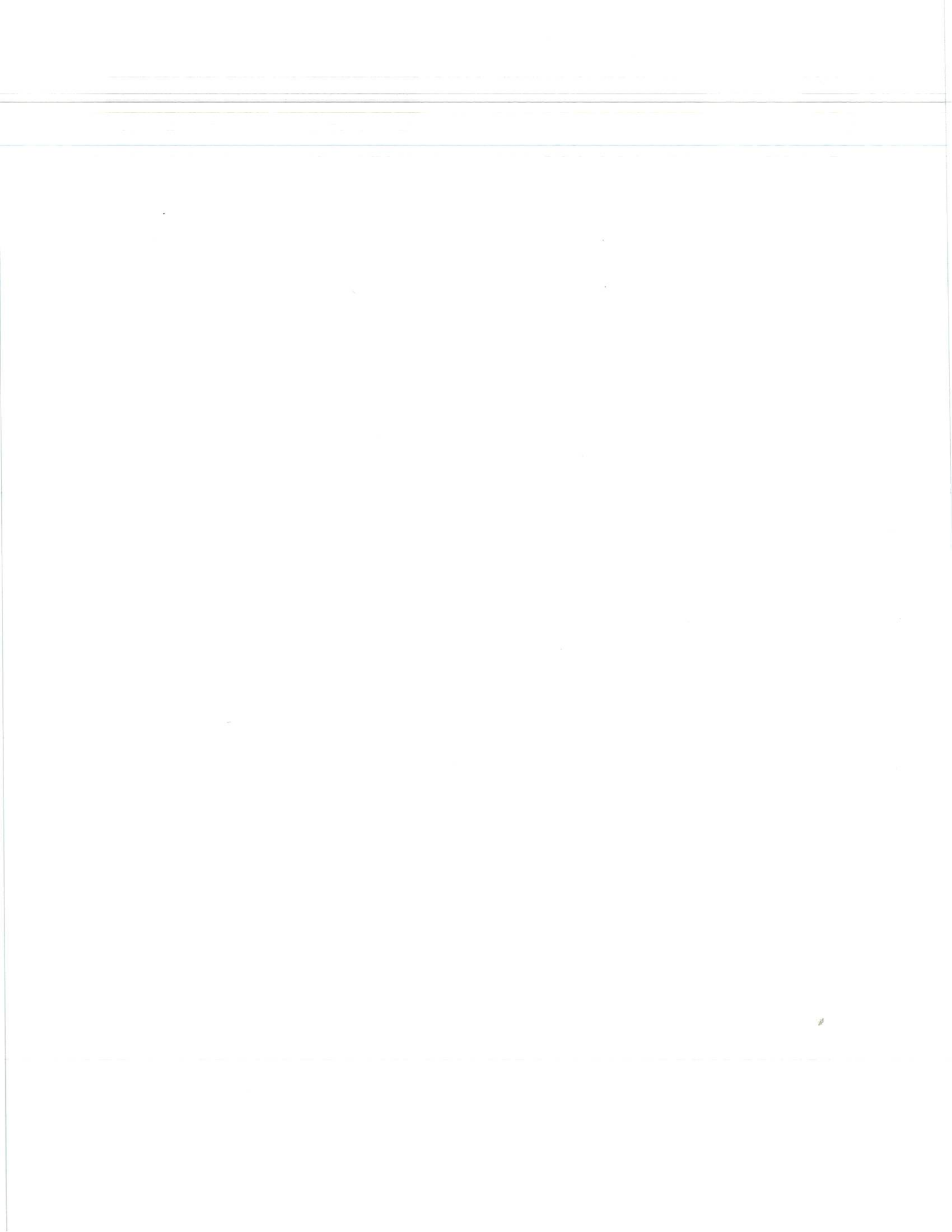
17. $-\frac{1}{4}(-2 + 4.5)$

18. $\frac{2(7.2 + 3^2)}{2.7 + 1.30}$

Order from least to greatest.

19. $3.1 \times 10^{-3}, 7.8 \times 10^{-5}, 1.9 \times 10^{-3}$

20. $2.5 \times 10^9, 9.2 \times 10^8, 8.6 \times 10^{-1}$



Multiply or divide. Write the answer in scientific notation and standard form.

21. $\frac{6.3 \times 10^5}{2.1 \times 10^7}$

22. $(5.4 \times 10^8)(3.5 \times 10^{-5})$

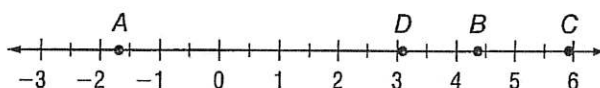
Simplify each expression. Write the answer in standard form.

23. $(\frac{1}{2})^2$

24. $(1.5 \times 10^{-3})^2$

25. $\sqrt{0.04} \div \sqrt{16}$

Tell what point on the number line corresponds to each number.



26. $\sqrt{19}$

27. $-\sqrt{3}$

28. $\sqrt{35}$

29. π

Simplify.

30. $\sqrt{48}$

31. $\sqrt{125}$

32. $\frac{\sqrt{4}}{10}(-\sqrt{100} + 5)$

Find the length of the missing side of each right triangle. The legs of the triangle are a and b and the hypotenuse is c .

33. $a = 8$ ft, $b = 15$ ft, $c = ?$ ft

34. $a = 3$ m, $b = ?$, $c = 3\sqrt{2}$ m

Evaluate each expression when $x = 5$, $y = 2.5$, and $z = 1$.

35. $x^2 + 2y - z$

36. $\frac{-x^3}{y} \cdot z^{10}$

37. $(y + z)^2 - x$

Solve each equation.

38. $\frac{m}{15} = 0.8$

39. $-\frac{n}{2} + 7\frac{1}{2} = 3$

40. $\frac{r-5}{7} + 3 = 6$

Rename each decimal as a fraction or mixed number in lowest terms.

41. $0.7\bar{3}$

42. $0.\overline{54}$

43. $0.2\bar{7}$

44. $3.8\bar{3}$

Solve each equation.

45. $|-4x| = 12$

46. $\frac{1}{5}|a - 3| = 12$

47. $2|b| + 9 = 11$

Solve for the given variable.

48. $C = sr + f$ for r

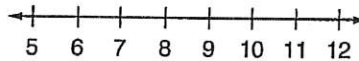
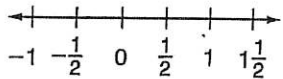
49. $A = \frac{1}{2}bh$ for b

50. $8a = bc - 2a$ for c

Graph each inequality on the number line.

51. $x < -\frac{1}{2}$

52. $y > 10$



Solve each inequality. Then graph the solution.

53. $5d < 4d + 8$

54. $1.8z > -54$

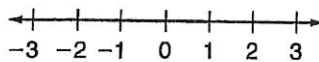
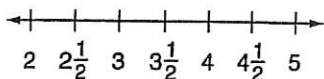
55. $2a - 13 \geq 15$

56. $5t - 8 \leq 3t + 2$

Graph each compound inequality.

57. $m > 3$ and $m \leq 4\frac{1}{2}$

58. $r < -1$ or $r > 0$



Solve. Show your work.

59. A garden is $\frac{3}{4}$ as wide as it is long. What is the area of the garden if it is 36 feet long?

60. Lana planted roses 12 inches apart in a row. She planted tulips 18 inches apart in a row parallel to the first row. At what intervals will a rose and a tulip plant be directly across from each other? Explain.

61. A $6\frac{1}{2}$ ounce can of tuna fish costs \$1.30 a can. A $9\frac{1}{2}$ ounce can costs \$2.00 a can. Which is the better buy? Explain.

62. At 12 P.M., the temperature was 5°C . For the next 5 hours, the temperature dropped 2 degrees per hour. What was the temperature at 5:00 P.M.?

63. A bird flew 5 miles north then 12 miles east. What is the shortest distance from where the bird began and where it ended?

64. A rectangle has an area of 64 square feet and a perimeter of 40 feet. The length is the square of the width. What is the length of the rectangle?

65. Diane bought a used bike for \$12 more than half its original price. Diane paid \$60 for the bike. What was the original price of the bike?

66. David bought some notebooks and a pen at the school store. The pen cost \$2.50. Notebooks cost \$3.25 each. He gave the cashier \$20 and received \$4.50 change. How many notebooks did he buy?

67. Aaron plans to spend at most \$80 on shirts and pants. He bought two shirts for \$15 each. What is the greatest amount he can spend on pants?

68. The product of two even integers is a number x , where $-12 < x < 0$. Find the pair of integers with the least sum.

Name _____

Simplify. Write each polynomial in standard form.

1. $(b^2 + 3b^3 - 7b) + (14 - 6b^2 + 2b)$

2. $17 - 4a^3 - 3a(a^2 + 5a - 2)$

Write the degree of each polynomial. Then evaluate each polynomial when $x = 2$ and $y = -2$.

3. $-5x^2y^3 - 3x^3y + 2$

4. $7x - 4y^2 + 3y$

Simplify.

5. $(-5m^2 - 3m - 14) + (30m^2 + 7)$

6. $(30m^2 + 7) - (-5m^2 - 3m - 14)$

7. $\frac{-a^2b + 3ab - 5ab^2}{-ab}$

8. $-7a(-a^2b + 3ab - 5ab^2)$

9. $\frac{7x^2y - 28xy + 14xy^2}{7xy}$

10. $(3a - 4b)(2a + 14b)$

11. $(0.6a - 0.2)(0.6a + 0.2)$

12. $(\frac{3}{4}m + \frac{1}{3})^2$

Factor.

13. $36n^{15} + 24n^7 - 18n^3$

14. $52r^5s^2 - 39r^2s^3 + 26r^2s^4$

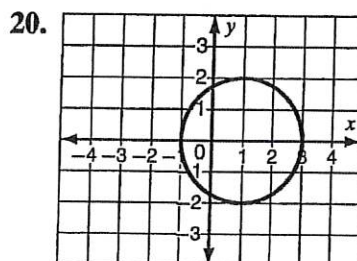
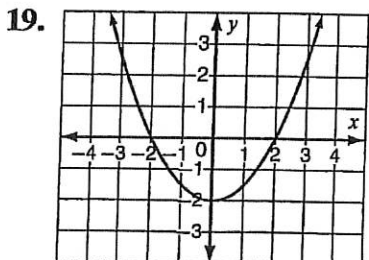
15. ~~$x^2 + 4x - 21$~~

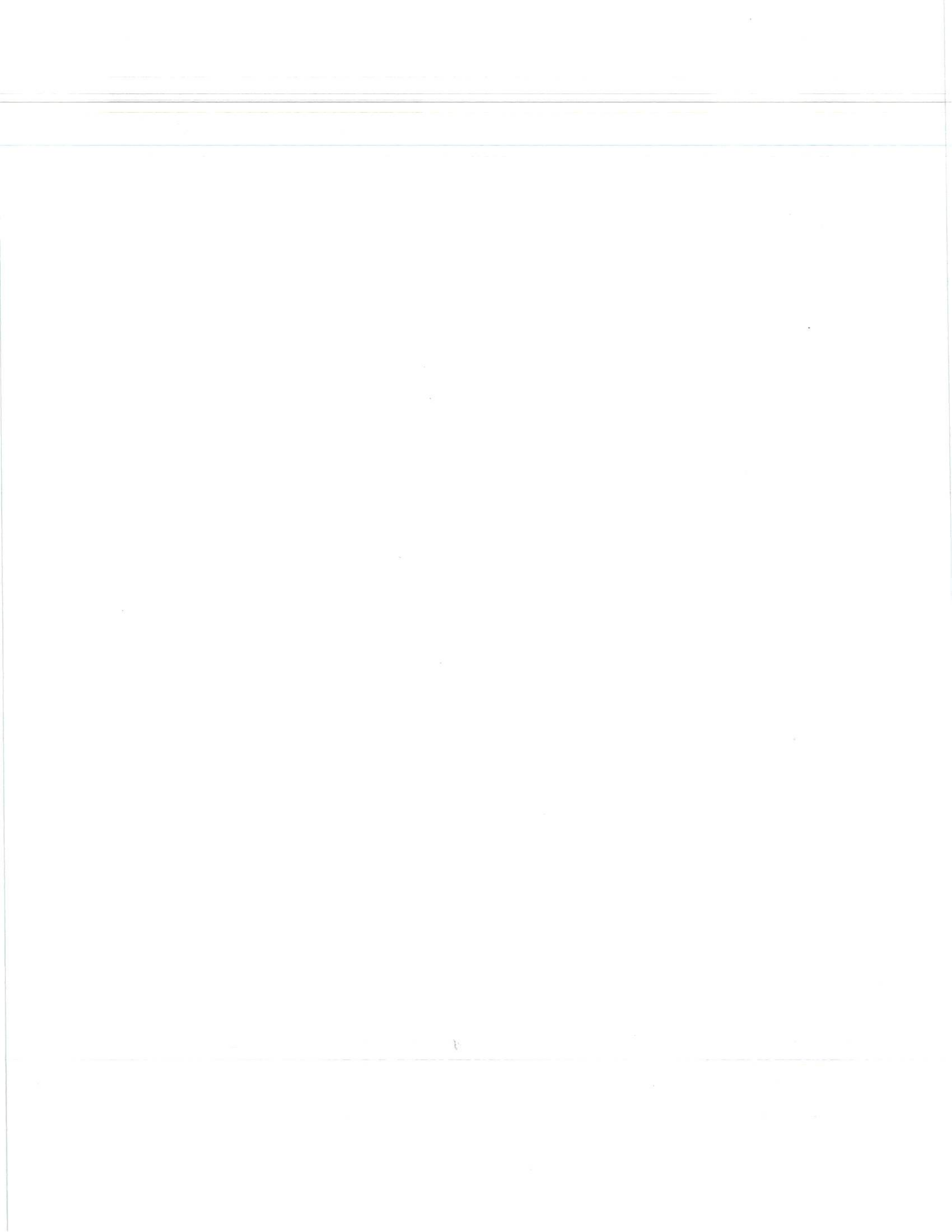
16. ~~$0.25m^2 - 0.09$~~

17. ~~$4s^2 - 44s + 121$~~

18. ~~$11x^2 + 57x - 54$~~

Determine whether each relation is a function. Write *function* or *not a function*.





Write each function rule.

21.

Input (x)	1	0	-1
Output f(x)	8	3	1

22.

Input (x)	-4	0	4
Output f(x)	-1	0	1

Decide whether a positive, negative, or no correlation may exist between:

23. the amount of sleep students need and number of classes in school day.

24. the temperature outside and heating bill.

25. a bank balance and the amount of interest earned.

Solve.

26. Given that y varies directly as x , what is the equation of direct variation when $y = 2.75$ and $x = 1.1$?

27. What is the slope of the line that passes through the points $(0, -7)$ and $(4, 2)$?

28. What are the x - and y -intercepts of the equation $y = 0.3x - 9$?

Find the equation of each line.

29. Slope $m = -2$ with coordinates $(3, 4)$

30. Coordinates $(-2, 5)$ and $(4, 3)$

31. Parallel to the line $5x - 4y = 20$, and passes through point $(4, 4)$

Solve each system of equations.

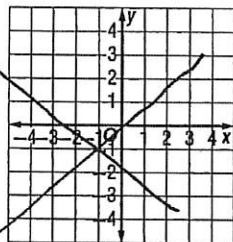
32.
$$\begin{cases} y = -\frac{4}{7}x \\ y = \frac{2}{7}x + 2 \end{cases}$$

33.
$$\begin{cases} -3x - 5y = -16 \\ -8x + 5y = -17 \end{cases}$$

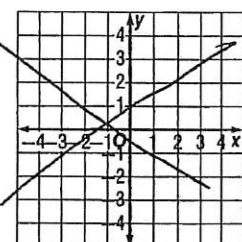
34.
$$\begin{cases} -65x - 31y = -68 \\ -65x + 42y = -214 \end{cases}$$

Graph each solution set on a separate sheet of paper.

35. $2x - 3y \geq -6$



36.
$$\begin{cases} \frac{2}{3}x - y > 0 \\ x + y \leq 3 \end{cases}$$



37. Write a ratio for the number of vowels to the number of consonants in the word "proportion." Express in simplest form.

38. Find the unit price.

18 ounces of cereal for \$4.68

Solve each proportion.

39. $\frac{5.7}{c} = \frac{1.2}{2.8}$

40. $\frac{x+7}{2} = \frac{x-5}{3}$

41. $\frac{5}{6} = \frac{8}{f}$

Write a proportion to represent the situation. Then solve.

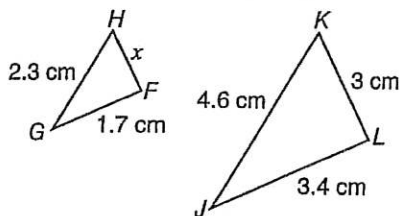
42. How many square inches are in 3 square yards?

~~43. Three chefs can cut vegetables for a salad in 15 minutes. How long would it take 5 chefs to cut the same amount of vegetables?~~

44. Scale: 5 cm: 225 miles
Scale measure: 4.2 cm
Actual measure: n miles

Solve.

45. $\triangle FGH$ is similar to $\triangle LJK$.
What is the missing length?



~~46. In $\triangle STV$, $m\angle S = 90^\circ$, $m\angle T = 28^\circ$, $VT = 14$ ft. What is the length of ST to the nearest tenth? Use a trigonometric ratio and a calculator.~~



47. Write 325% as a fraction in simplest form and as a decimal.

48. Find the percent of change.
Original: \$75.80
New: \$56.85

49. What is the discount rate?
Regular Price: \$56.45
Discount: \$11.29

50. What percent of 42 is 147?

51. What is $\frac{1}{5}\%$ of 585?

~~52. What is the base, b , if 34 is $33\frac{1}{3}\%$ of b ?~~

Solve. Show your work.

53. A rectangular field is $\frac{3}{4}$ as wide as it is long. What is the area of the field if it is $x + 8$ feet long?

54. If the product of three factors is $(x^3 + 3x^2 + 2x)$, what are the factors?

55. The area of a square is $(16s^2 - 24s + 9)$ m². What is the length of one side of the square?

56. Together Jessica and her dad are 86 years old. Dad is 10 years less than 3 times Jessica's age. How old are Jessica and her dad?

57. To rent a certain cell phone, you pay a fee of \$1.50 per day and \$.11 per minute of calls. Express the total cost of the phone as a function of days (d) rented and minutes (m) used. Use the function to determine the total cost for a 9-day rental, using 153 minutes.

58. A 15-foot ladder leans against a building. The ladder's base is 6 feet from the building. To the nearest degree, find the measure of the angle that the ladder makes with the ground.

59. Kara, Emma, and Chris shared a $22\frac{1}{2}$ -hour babysitting job. They divided the job, in that order, into three parts with a ratio of 3 : 5 : 7. How long did each person babysit?

60. Mrs. Slatter earns a weekly salary of \$650 plus a 1.8% commission on sales she makes. Her sales one week totaled \$5837. What was her total income for the week?

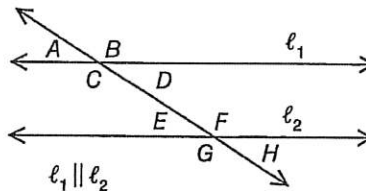
61. Which is the better buy?
\$5.00 off a \$28.99 purchase or
5% off the same item

62. Derek borrowed \$8000 from a bank that charges a rate of 5.75%, compounded quarterly. After 2 years, how much money does Derek owe the bank?

Name _____

Use the diagram to answer questions 1-3.

1. If $m\angle E = 42^\circ$, what are the measures of the complements and supplements of $\angle H$?



2. If $m\angle B = 135^\circ$, what is $m\angle F$? How do you know?

3. If $m\angle A = (2x - 25)^\circ$ and $m\angle C = (3x + 10)^\circ$, what is $m\angle B$?

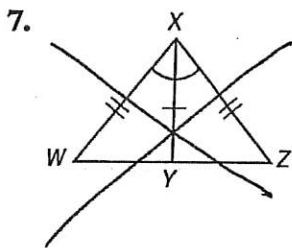
Find the measure of each interior and exterior angle for each regular polygon.

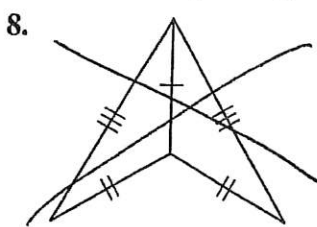
4. hexagon

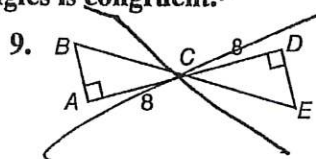
5. triangle

6. 16-gon

~~Name the congruence rule, if any, which states why each pair of triangles is congruent.~~





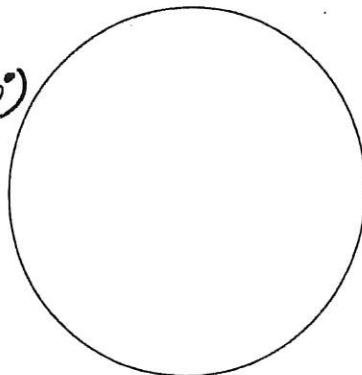


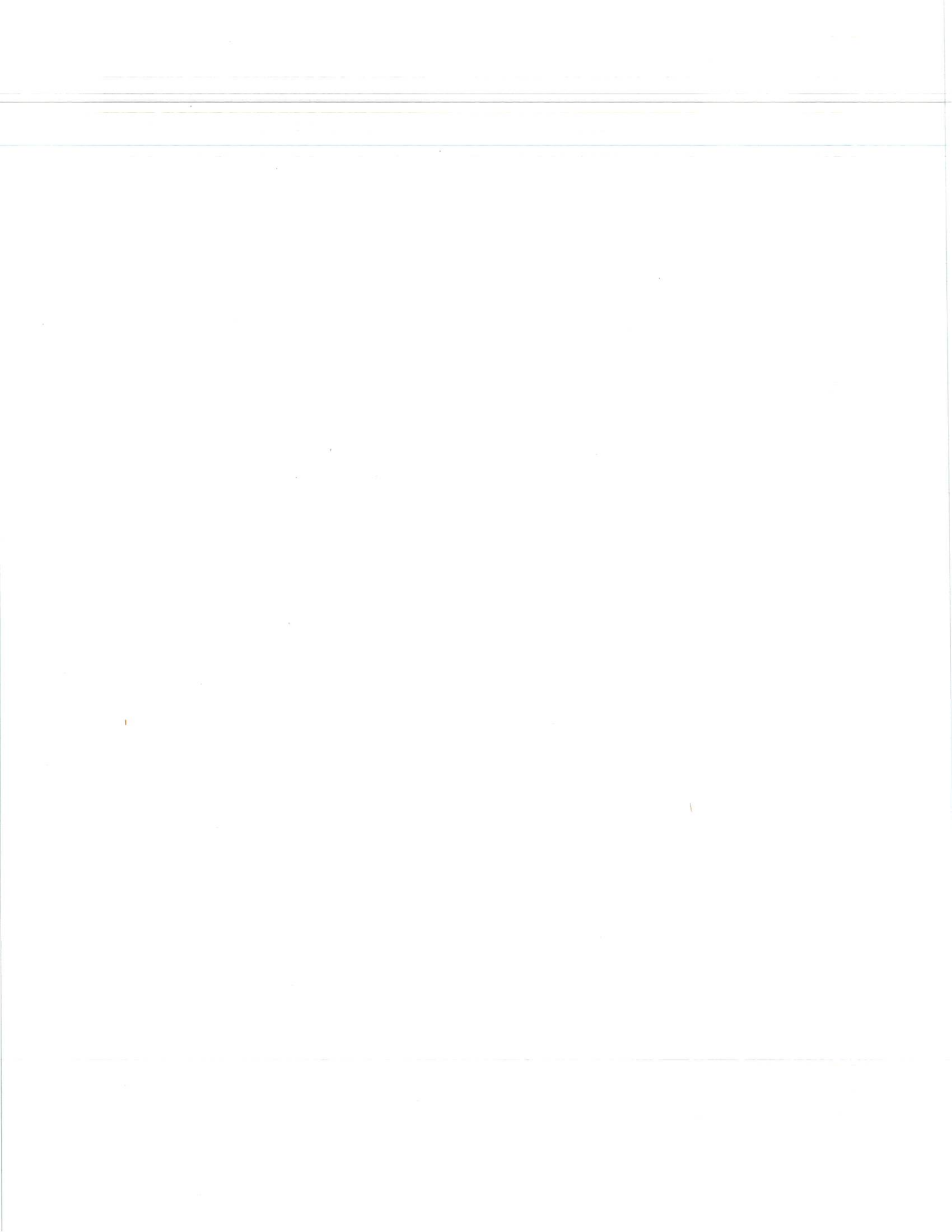
Complete the table. Then construct a circle graph.

10.

Students' Favorite Colors		
Color	Number of Students	Degrees on Graph
Blue	35	
Green	15	
Purple	10	
Red	40	
Yellow	25	

(% of 360°)





~~Draw $\triangle XYZ$, then construct the angle bisector of $\angle X$.~~

11.

Solve.

~~12. What is the precision unit, the GPE, and the range of measure for 0.8 mm?~~

13. What is the product of 34.92 cm and 0.120 cm? Round to the correct number of significant digits.

14. What is the length of a rectangle that has a perimeter of 72 inches and a width of 16 inches?

Find the missing dimension of each figure. Use 3.14 for π .

15. area of a circle with a diameter of 10 cm

16. height of a trapezoid with bases that measure 12.4 in. and 14.6 in. and an area of 81 in.²

17. circumference of a circle with an area of 2826 ft²

Solve.

18. A circular walkway is 5 feet wide. It surrounds a circular pool that has a diameter of 24 feet. What is the area of the walkway?

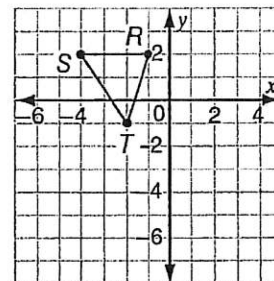
19. What polygon has vertices of $(-1, 2)$, $(3, 2)$, $(5, -1)$, and $(1, -1)$? What is its area?

Use the figure on the coordinate grid for exercises 20 and 21.

Find the vertices of each image created by the given transformation(s).

20. $\triangle RST$ reflected over the y-axis

21. $\triangle RST$ rotated 90° counterclockwise about the origin, then dilated by a scale factor of 2



Write the next three terms for each sequence.

22. A, B, A, C, A, D, ...

23. 0, 2, 5, 9, 14, 20, ...

Write a rule for each sequence.

24. ~~Write a recursive rule for the sequence 7, 4.9, 3.43, 2.401, ...~~

25. ~~Write an explicit rule for the sequence -5, -10, -15, -20, ...~~

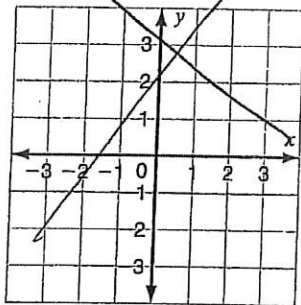
On graph paper, draw a graph of the train route that represents the data in the table.

26.

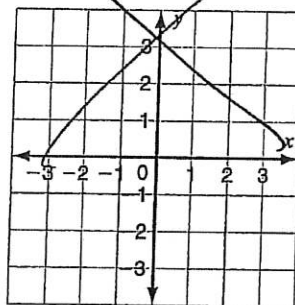
Time (min)	Distance (mi)
0	0
5	0.3
10	0.7
15	0.7
20	1.0

Tell whether each function is *linear*, *quadratic*, or *other*. Graph the function.

27. ~~$f(x) = -x^2 + 2$~~



28. ~~$g(x) = |x| - 2$~~



Find *y* or the constant, *k*.

29. ~~y varies inversely with x , and $y = 23.45$ and $x = 4.2$~~

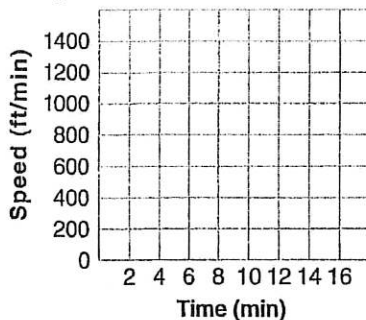
30. ~~y varies inversely with x , and $x = 5.4$ and $k = 0.54$~~

Solve. Show your work.

31. Elena, Frank, George, and Hannah are new student council officers. How many different ways can they be assigned to the positions of president, vice president, secretary, and treasurer?

33. Naima has a rectangular carpet that is 8 feet by 6 feet. She wants a circular rug that has the same area. What will the diameter of the rug be to the nearest tenth of an inch?

35. Nate can run a mile in 4 minutes, at a rate of 1320 ft/min. When Nate jogs, he covers a mile in 6 minutes. His walking time for a mile is 15 minutes. Is this relationship an inverse variation? Graph the relationship.



37. For her first birthday, Miriam received a gift of one penny. Each year, her birthday gift is doubled. Write an explicit formula for the sequence. How much money will Miriam receive on her 21st birthday?

32. A man stands at the top of a building that is 708-feet tall. He sees the roof of his car which is 5 feet above the ground. He looks down at the car at a 45° angle. How far is he from the roof of his car?

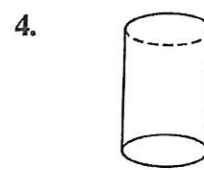
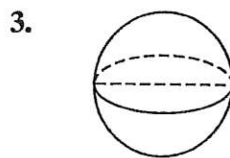
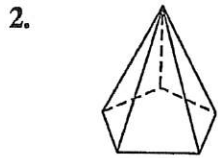
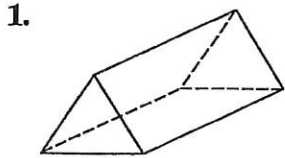
34. $\angle D$ is a right angle in $\triangle DEF$. *HINT: DIAGRAM*
If $\overline{DE} = 7$ cm and $\overline{DF} = 10$ cm, what is the measure of $\angle F$?

36. *HINT: DIAGRAM*
A rectangular yard measures 20 feet by 25 feet. Its outer edge is a stone walkway that is 3 feet wide. Inside the walkway is a lawn. At the center of the lawn is a circular pond with a radius of 5 feet. What is the area of the grass lawn?

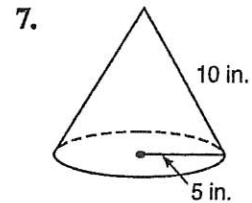
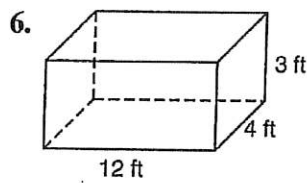
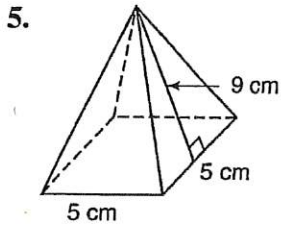
38. A square has a perimeter of 54.4 inches. A new square is created by multiplying each side of the first square by 7.6. What is the area of the new square?

Name _____

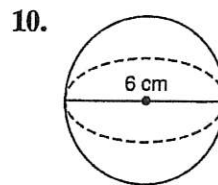
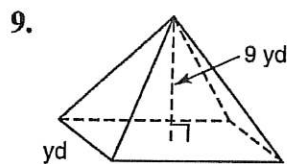
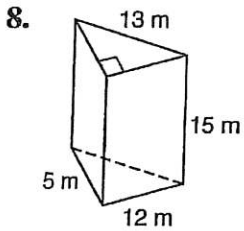
Name each figure.



Find the surface area of each figure. Use 3.14 for π if necessary.

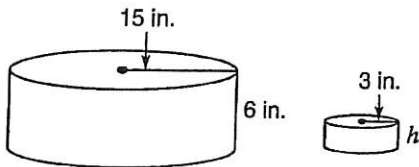


Find the volume of each figure. Use 3.14 for π if necessary.

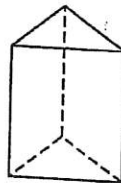


Solve.

11. What is the missing dimension of the similar cylinder?

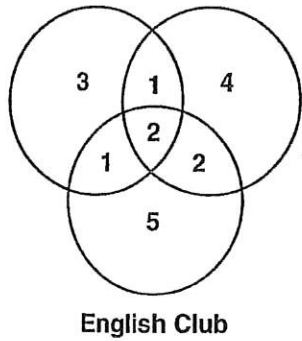


12. Draw an axis of symmetry for the figure below.



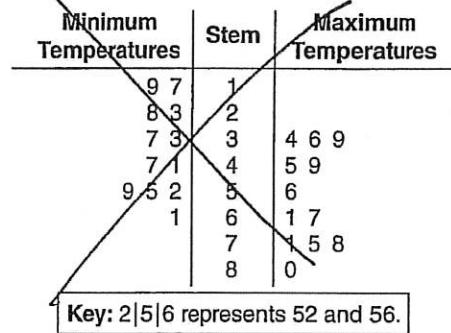


13. Math Club Science Club



What percent of the students belong to both the Math Club and the Science Club?

14. Minimum and Maximum Monthly Temperatures (°F), 2000–2009

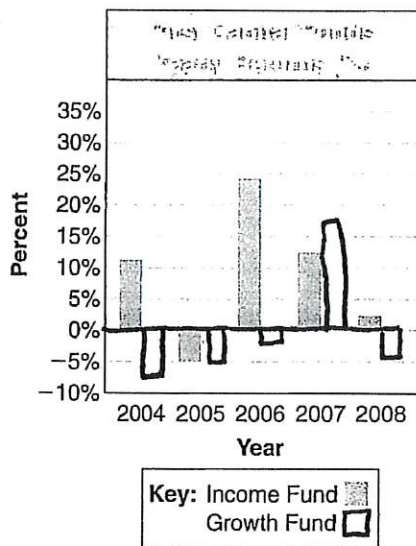


What is the median minimum temperature?

Make a box-and-whisker plot to represent the data below.

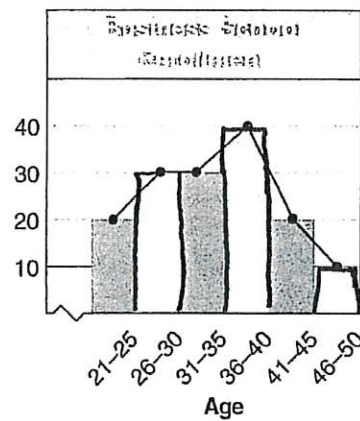
Sample	1	2	3	4	5	6	7	8	9	10
Number Counted	63	40	16	61	25	29	60	43	37	52

16.



Mr. Lee invested \$100,000 in the First Capital Growth Fund at the start of 2008. About how much money did he earn or lose in 2008?

17.



In which interval is the median age of the students at the business school?

Identify the type of graph that will best illustrate the data. Explain.

18. Earnings over a six-month period

A number cube is labeled 1 through 6. Express each probability as a fraction, decimal, and percent.

19. $P(5)$

20. $P(\text{even number})$

21. $P(\text{number less than 6})$

Use the experiment below for questions 22–26. Find the probability or odds.

A marble is chosen randomly from a bag containing 4 blue, 6 red, 8 green, and 6 yellow marbles.

22. $P(\text{red or yellow})$

23. $P(\text{not blue})$

24. Odds of a green marble

25. Tim chooses a marble and puts it back. Then he chooses another marble. Find $P(\text{red, red})$.

26. Joan chooses a marble and keeps it. Then she chooses another marble. Find $P(\text{red, green})$.

Evaluate.

27. ~~$(3)(4)$~~

28. ~~${}_6P_2$~~

29. ~~${}_5C_3$~~

Write the converse, inverse, and contrapositive of each.

30. If it is May, then it is spring.

31. ~~$\sim p \rightarrow q$~~

Give a counterexample to show that the statement is false.

32. If a number is divisible by 2, then it is divisible by 4.

Solve. Show your work.

33. How much wrapping paper will Rose need to wrap a cube-shaped box each of whose edges measures 3 ft?

34. A cube has a surface area of 216 in.^2 . What are the height, radius, and volume of the largest cone that can fit in the cube? Use 3.14 for π .

35. Lana made a greenhouse in the shape of a square pyramid. Each edge of the base is 25 cm long. The slant height of each face is 20 cm. What is the pyramid's surface area?

36. A cylindrical building is 32 feet high with a radius of 12 feet. What is the volume of a model of the building if the model has a scale factor of $\frac{1}{4}$? Use 3.14 for π .

37. David, Tom, and Cathy randomly take the first three places in a line. What is the probability that a boy is second in line?

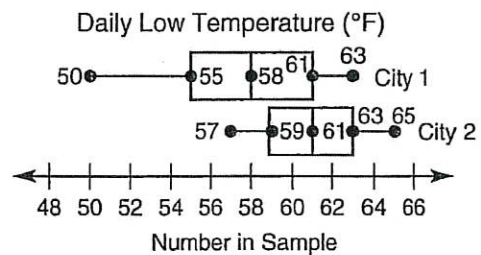
38. A box contains 24 muffins. Eight are blueberry. Marilyn picked one at random. What are the odds that she picked a blueberry muffin?

39. There are 8 finalists in a math contest that has 3 prizes. In how many ways could the finalists win the first, second, and third prizes?

40. Kevin tosses a coin 6 times. He will win a prize if he tosses 6 heads. What is the probability that the coin will land on heads all 6 times?

Use the box-and-whisker plot for questions 41–42.

41. Heather made a box-and-whisker plot of the daily low temperatures for two cities. What was the daily median temperature for each city?



42. Which city has the greater interquartile range? What is that range?
