



Algebra Alley

A movie ticket costs \$7 today. Inflation is expected to grow by four percent a year for the next several years. If n represents the current cost of the ticket, t , the time in years, and r , the rate of inflation, use the formula, $C = n(1 + r)^t$ to predict the cost (C) of the ticket, if this inflation rate continues

- (a) for 5 years
- (b) for 30 years.

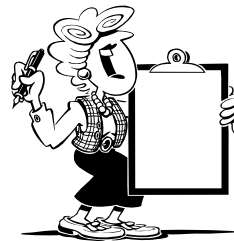


(Review)



All About Data

Look through the almanac for data over time. Make a scatterplot of the data and approximate a line of best fit. Use the line to make a prediction about the data.



(4.01, 4.02)



What's The Problem?

In the final four digits of a license plate, the sum of the first two equals the sum of the last two. Also, the sum of the first and last is twice the sum of the middle two, and the first two form a two digit number that is twice that formed by the last two. The number does not contain any 0's. What are the final four digits in order?

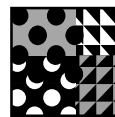
From Mathematics Teacher, February 1997 (1.02)



Mathematically Speaking

Explain how to change $0.\bar{1}$ to a common fraction.

(Review)



Measurement Wrap Up

Collect a week's worth of newspapers. Stack, measure and find the volume of the newspapers.

What would be the volume of a year's worth of newspaper? Mark off an area equivalent in volume in your classroom.

Make a table showing the accumulation of newspapers from 1 to 20 years. Write an equation with two variables representing the function. Graph the function. Make your data count!

Write an article to encourage recycling of newspapers. Support your position.



(Review, 5.01a)



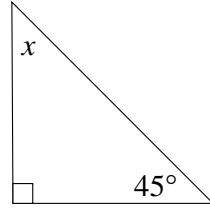
Keeping Skills Sharp

Write answers here:

1. Write three fractions equivalent to $\frac{3}{5}$.

1. _____

2. Find x :



2. _____

3. $\frac{5}{4} \times \frac{4}{5} \times \frac{5}{8} =$

3. _____

4. Write 33% as a ratio.

4. _____

5. $\frac{1}{2} + \frac{3}{8} =$

5. _____

6. 17% of 5.66 =

6. _____

7. An angle greater than 90° and less than 180° is called _____.

7. _____

8. Find the median and mean:

1, 2, 5, 3, 9, 7, 1

8. _____

9. $2\frac{1}{2} \div \frac{2}{7} =$

9. _____

10. $5 - 6 - (-9) =$

10. _____



Mental

Math

Directions to Students:

Write your answers as the questions are called out. Each question will be repeated only once.

1

6

2

7

3

8

4

9

5

10

Answer Key

Grade 8

WEEK
22

Algebra Alley

- (a) \$8.52 ($\7.00×1.04^5)
(b) \$22.70 ($\7.00×1.04^{30})

What's the Problem?

5427

Mathematically Speaking

Let $n = \overline{.1}$

$$\begin{array}{r} 10n = 1.\overline{1} \\ - (n = \overline{.1}) \\ \hline 9n = 1 \\ n = \frac{1}{9} \end{array}$$

All About Data

Answers will vary.

Measurement Wrap Up

Answers will vary.

Keeping Skills Sharp

1. $\frac{6}{10}, \frac{9}{15}, \frac{30}{50}$
2. 45°
3. $\frac{5}{8}$
4. 33:100
5. $\frac{7}{8}$
6. 0.9622
7. obtuse
8. median = 3, mean = 4
9. $8\frac{3}{4}$
10. 8

Mental Math

This section provides an opportunity for sharpening students' mental computation.

1. Write the ratio 12:4 in 2 other ways.
2. Write as an improper fraction: $3\frac{7}{8}$
3. Write $\frac{29}{7}$ as a mixed number.
4. 8 cm = ____ m
5. Write 3 lb. 1 oz. in ounces.
6. Write 20% as a fraction.
7. Write as a decimal: 2%
8. $4^3 \cdot 4^2$
9. Solve for t: $-13t = 52$.
10. What percent of 18 is 6?

Mental Math

1. 12 to 4, 6:2, 3:1, 24:8, etc.
2. $\frac{31}{8}$
3. $4\frac{1}{7}$
4. 0.08 m
5. 49 ounces
6. $\frac{1}{5}$
7. 0.02
8. 4^5
9. -4
10. $33\frac{1}{3}\%$



Algebra Alley

Use two different colored number cubes. Identify one of the cubes as x -values and the other as the y -values. Roll the number cubes and create an ordered pair. Graph the point. Roll the cubes again and graph the point.

What is the slope of the line determined by the two points? Write the equation of this line.

(5.01c, 5.02)



What's The Problem?

Jack weighs $\frac{4}{5}$ of his weight plus 40 pounds.

Write an equation to represent this situation and find w , Jack's weight.



(5.03)



Mathematically Speaking

Which is the best buy? Why?

Jolly Ranchers

8 oz. for \$0.65

12 oz. for \$0.99

16 oz. for \$1.29

20 oz. for \$1.75

(1.02)



All About Data

The cost of a half-gallon of juice drink in 14 stores in Raleigh is:

\$2.25 ////

\$2.00 //

\$1.95 ///

\$1.80 ###

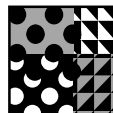
Larry said the mean price was \$2.00 and the median about \$1.98.

Curley says the mean price is about \$1.99 and the median is \$1.95.

Moe says the mean price is about \$6.96 and there is no median.

What mistakes did they make and what are the correct values for the mean and median?

(4.01)



Measurement Wrap Up

On a map, three towns lie in a straight line. Abbeyville is 35 miles from Beantown. On the map this distance is 2 cm. The distance from Abbeyville to Clarkton is 13 cm on the map. If Beantown is between Abbeyville and Clarkton, how far, in miles, is it from Beantown to Clarkton?



(Review)



Keeping Skills Sharp

1. What is the probability of choosing a vowel from the word MATHEMATICS?
2. Cali bought a sweater priced at \$60. If the sales tax is 9%, what is the total purchase price of the sweater?
3. Two angles whose measures have a sum of 180° are called _____.
4. $\frac{3}{4} \times 6\frac{1}{2} =$
5. Find the amount you save when you buy a \$210 bicycle on sale for 15% off.
6. Find the interest: \$5000, 8.5%, 1 year.
7. Write $5\frac{2}{5}\%$ as a fraction.
8. Express as a unit rate 5 million people in 400 square miles.
9. Solve the proportion: $\frac{3}{4} = \frac{9}{N}$
10. On a scale drawing 1 centimeter represents 2 meters. What length on the drawing should be used to represent 3.2 meters?

Write answers here:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____



Mental Math

Directions to Students:

Write your answers as the questions are called out. Each question will be repeated only once.

- | | |
|---------|----------|
| 1 _____ | 6 _____ |
| 2 _____ | 7 _____ |
| 3 _____ | 8 _____ |
| 4 _____ | 9 _____ |
| 5 _____ | 10 _____ |

Answer Key

Grade 8

WEEK
23

Algebra Alley

Answers will vary.

What's the Problem?

$$200 \text{ lbs} \quad w = \frac{4}{5}w + 40$$

Measurement Wrap Up

192.5 miles

Mathematically Speaking

16 oz. for \$1.29 is the least expensive per ounce

All About Data

Larry forgot about the 14 stores and just used the four prices.

Curley got the mean and median right
Moe divided the total costs of 14 stores by 4 instead of 14 and because there was an even number of values could not find the median.

Keeping Skills Sharp

1. $\frac{4}{11}$
2. \$65.40
3. supplementary
4. $4\frac{7}{8}$
5. \$31.50
6. \$425.00
7. $\frac{27}{500}$
8. 12,500 people in one square mile
9. $N = 12$
10. 1.6 centimeters

Mental Math

This section provides an opportunity for sharpening students' mental computation.

1. 2.36×200
2. Simplify 2^3
3. $\frac{4}{?} = \frac{20}{35}$
4. 25% of 8
5. Find the perimeter of a garden that measures 12 feet by 4 feet.
6. How many minutes are in a day?
7. $\sqrt{25} = ?$
8. Which is greater: 5^2 or 2^5 ?
9. $1 - \frac{5}{6}$
10. 3×8.5

Mental Math

1. 472
2. 8
3. 7
4. 2
5. 32 feet
6. 1,440 minutes
7. 5
8. 2^5
9. $\frac{1}{6}$
10. 25.5



Algebra Alley

Pam and Ellen are selling lemonade for a project at the local recreation center. They have calculated the cost of a cup of lemonade to be 22¢. They plan to make 150 cups of lemonade. If they sell each cup for 30¢, how much profit will they make? How many cups do they need to sell to make at least \$25.00 profit?

Write an algebraic equation that will reflect this situation and solve it.

(5.03)



All About Data

1. Watch a basketball game and collect data on the number of shots attempted and the number of shots made (exclude foul shots).
2. Put the data into a table.
3. Make a scatter plot using the data.
4. Does there appear to be a relationship between the number of shots attempted and the number of shots made?



(4.01)



What's The Problem?

Jenna has \$65.00 to spend. She found a purse for \$15.95, a shirt for \$18.00 and a pair of shoes for \$28.50. She must pay 6% sales tax on her purchases. Which items could she buy if she wants to spend as much of the \$65.00 as possible? (She may buy more than one of an item if she chooses.)

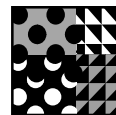
(1.02)



Mathematically Speaking

Keisha is conditioning for the track team. On the first day, she ran 5 laps around the track. The second day she ran 6 laps. The third day she ran 8, and on the fourth day she ran 11. To continue this pattern, how many laps should she run on the seventh day? On which day will she reach her goal of 40 laps? How many total laps will she have run by then?

(1.02)



Geometry Wrap Up

Given a circle and a square, what is the maximum number of points of intersection the two polygons can have? . . . the minimum?

(3.01)



Keeping Skills Sharp

Write answers here:

1. $(3^2 + 11) - 4 + 25 \div 5 =$ 1. _____
2. Find the perimeter of a regular octagon with sides 2.3 meters. 2. _____
3. Find the circumference of a circle with diameter of 16.5 cm. 3. _____
4. If $a = \frac{1}{2}$ and $x = 4$, then $(2a - x)(2x - 6) =$ 4. _____
5. Simplify: $\frac{-15 + -27}{3}$ 5. _____
6. Solve for f : $f + \frac{3}{5} = \frac{3}{4}$ 6. _____
7. Solve for q : $q - (-83) = 121$. 7. _____
8. Find the surface area of a cube with edges of 5 cm. 8. _____
9. 112 ounces = _____ pounds 9. _____
10. An angle less than 90° is called _____. 10. _____



Mental Math

Directions to Students:

Write your answers as the questions are called out. Each question will be repeated only once.

- | | |
|---------|----------|
| 1 _____ | 6 _____ |
| 2 _____ | 7 _____ |
| 3 _____ | 8 _____ |
| 4 _____ | 9 _____ |
| 5 _____ | 10 _____ |

Answer Key

Grade 8

WEEK
24

Algebra Alley

150 cups will give them a profit of \$12. They must sell 313 cups to make \$25 profit.

If x = the no. of cups sold, then the equation: $30x - 22x \geq 2500$

What's the Problem?

Two purses and a pair of shoes; \$64.02

All About Data

Answers will vary.

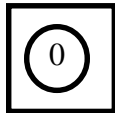
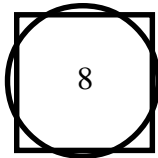
Mathematically Speaking

7th day, 26 laps; 9th day she will reach 40 laps.

Total laps, including the 40, is 164

Geometry Wrap Up

maximum: 8,
minimum: 0



Keeping Skills Sharp

- 21
- 18.4 meters
- about 51.84 cm
- 6
- 14
- $f = \frac{3}{20}$
- $q = 38$
- 150 cm²
- 7 pounds
- acute

Mental Math

This section provides an opportunity for sharpening students' mental computation.

- 15 cups = _____ pints
- $\sqrt{36} = \underline{\hspace{2cm}}$
- Write 230,000 in scientific notation.
- Write 1.07×10^4 in standard form.
- If $27 = -3x$, then $x = \underline{\hspace{2cm}}$
- The point located at $(-3, 7)$ is in which quadrant?
- Find a solution for $y = x - 2$.
- What number increased by eight is 35?
- Write as a mixed number: $\frac{29}{4}$
- $10^4 = \underline{\hspace{2cm}}$

Mental Math

- 7.5 pints
- 6
- 2.3×10^5
- 10,700
- 9
- II
- Some possible answers:
(4, 2) (2, 0) (3, 1)
- 27
- $7\frac{1}{4}$
- 10,000