



Algebra Alley

At a diving competition, Jan's first dive received 9 scores that averaged 9.0. To calculate her final score for the dive, the highest and lowest scores were removed and the average was taken of the remaining seven scores.

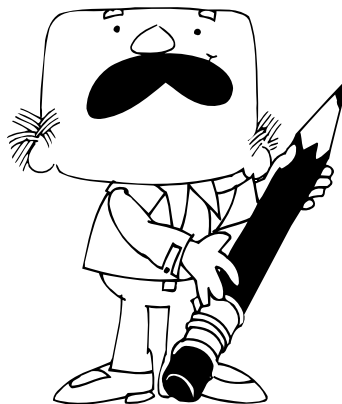
If her final score was 9.1, what was the sum of the two removed scores?

(5.03)



All About Data

There are 20 pens in a box. There are six more red than blue and four are green,. The probability of randomly picking a blue pen is 25%. How many red pens are in the box?



(5.03)



What's The Problem?

Hugo arrives for a basketball game early and watches as the arena fills up. Every 15 minutes he notices about what percentage of the arena is filled. Here is what he saw: (6:00, 2%), (6:15, 5%), (6:30, 10%), (6:45, 17%), (7:00, 26%) If the arena continues filling as shown, about what percent will be full at 7:30? When will the arena be closest to 100% full?

(1.02)



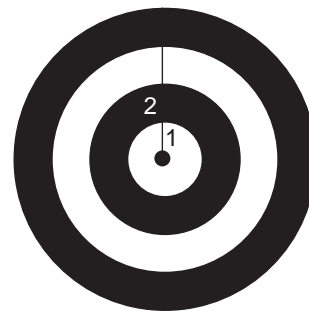
Mathematically Speaking

A store buys an item for a wholesale price, and marks the price up 25% to get a list price. Then the store has a 25% off sale. If you buy this item, will you be getting it for the wholesale price? More? Less? Explain. (1.02)



Geometry Wrap Up

The concentric circles shown have radii of 1, 2, 3, and 4. Express the area of the shaded regions, taken together, in terms of π .



(3.01)



Keeping Skills Sharp

Write answers here:

1. $3(a + b) - 8(a - b)$ 1. _____
2. Write in standard form 4.28×10^{-3} . 2. _____
3. Write seven tenths as a fraction, decimal, and percent. 3. _____
4. $x \cdot \frac{2}{3} = 1$ solve for x . 4. _____
5. $\frac{1}{4} + \frac{1}{3} \cdot \frac{1}{2}$ 5. _____
6. Write 2,352 in scientific notation. 6. _____
7. 1, 3, 6, 10...
If this pattern continues, what would be the next number in the sequence? 7. _____
8. $3\frac{1}{4} \cdot \frac{2}{3}$ 8. _____
9. Six students had the following amounts:
35¢, 10¢, 25¢, 20¢, 20¢, 15¢ Find the range, mode, median, mean to the nearest cent. 9. _____
10. If $p = 5$ and $s = 12$, find the value of $2s - 3p$. 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
1 3

Algebra Alley

17.3

What's the Problem?

The differences are increasing by 2 each time. The arena will be about 50% full at 7:30, and should be closest to 100% full at 8:15.

Mathematically Speaking

You will pay less than wholesale since the store deducted 25% of a higher price and added 25% of a lower price.

Geometry Wrap Up

$$\pi(2)^2 - \pi(1)^2 =$$

$$4\pi - \pi = 3\pi$$

$$\pi(4)^2 - \pi(3)^2 =$$

$$16\pi - 9\pi = 7\pi$$

$$3\pi + 7\pi = 10\pi$$

All About Data

11 are red

Keeping Skills Sharp

- $-5a + 4b$
- .00428
- $\frac{7}{10}$, .7, 70%
- $\frac{3}{2}$ 5. $\frac{5}{12}$
- 2.352×10^3
- 15
- $\frac{26}{12} = 2\frac{2}{12} = 2\frac{1}{6}$
- range: 25¢, mode: 20¢, median: 20¢,
mean: $20\frac{5}{6}$ or 21¢
- 9

Mental Math

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

- Solve for m : $\frac{m}{14} = 9$
- Simplify: $k + 12k + 23$
- $2^3 \cdot 2^3$
- $-3 \cdot -4 \cdot 5$
- What is the multiplicative inverse of -5?
- $10^2 - 4^3$
- $5 + (-6) \cdot 4 - 2$
- If $b = -12$, find the value of $b + 6$.
- Write in standard form: 3.1×10^3
- If $a = 3$ and $b = 2$, find the value of $a^2 - b^2$.

Mental Math

- $m = 126$
- $13k + 23$
- 2^6 or 1024
- 60
- $\frac{-1}{5}$
- 36
- 21
- 6
- 3,100
- 5



Algebra Alley

Bonnie is four years older than Clyde. Ten years ago she was twice his age. How old is Bonnie?

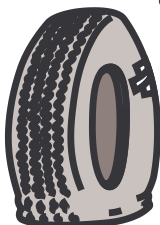


(5.03)



What's The Problem?

After 45,000 miles on your car, you had your first set of tires checked and you were told 50% of the tread was gone. You were told to replace the tires when only 20% of the tread remains. Assuming constant wear, what will your mileage be when they need to be replaced?



(1.02)



Mathematically Speaking

When a rectangle is stretched so that the length and width are 3 times as big as they were before, what happens to the area? Explain.



before



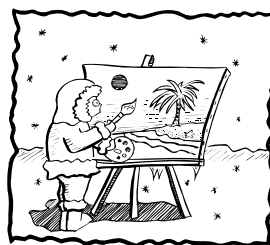
after

(2.01)



All About Data

The recorded low temperatures for six consecutive days were -3°C , 4°C , 1°C , -2°C , -4°C and -7°C . Given that the average low for the week was -2°C , what was the low temperature in degrees Celsius on the seventh day?

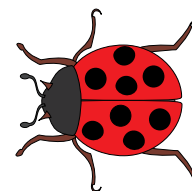
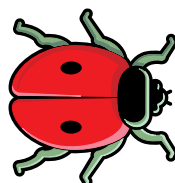


(Review)



Geometry Wrap Up

A ladybug crawls around a circle with a radius of 3 cm and center point A. A misterbeetle crawls around a circle with radius of 2 cm and a center at point B. If the distance between A and B is 8 cm, what is the *shortest* distance, in centimeters, that the two bugs could be from one another?



(3.01)



Keeping Skills Sharp

1. Write 5^3 in expanded form.

Write answers here:

2. Solve for x : $\frac{x}{21} = \frac{.5}{1.5}$

1. _____

3. _____² + _____² = 25

2. _____

4. $0.5 + 0.3 \cdot 0.2 =$

3. _____

5. Estimate 27% as a fraction. Give the actual fraction in simplest form.

4. _____

6. Name the factors of 48.

5. _____

7. 0, 0.7, 1.4, 2.1... What is the next number in the sequence?

6. _____

8. Name the property illustrated by the following:

$$5(x + 2) = 5x + 10$$

7. _____

9. Write as a decimal and fraction the number that represents 3 pennies as part of a dollar, . . . part of a half dollar.

8. _____

10. Solve for a : $\frac{6}{5} = \frac{a}{17.5}$

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

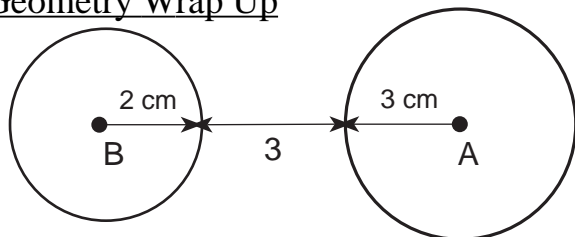
Grade 8

WEEK
14

Algebra Alley

Bonnie is 18

Geometry Wrap Up



3 cm

Mathematically Speaking

The area is nine times as great as before.

All About Data

-3°C

What's the Problem?

72,000 miles

Keeping Skills Sharp

- $5 \cdot 5 \cdot 5$
- 7
- 3 and 4 or 4 and 3
- 0.56
- $\frac{1}{4}, \frac{27}{100}$
- 1, 2, 3, 4, 6, 8, 12, 16, 24, 48
- 2.8
- Distributive Property of Multiplication over Addition
- $0.03, \frac{3}{100}; 0.06, \frac{6}{100}$
- 21

Mental Math

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

- $(2 + 1)^3 + (6 - 4)^2$
- Write 0.68 as a fraction.
- $(-1)^{14} = \underline{\hspace{2cm}}$
- If $n = 7$, what is the value of $2n + 5$?
- Name the next 3 terms:
3, 6, 12, 24, $\underline{\hspace{1cm}}$, $\underline{\hspace{1cm}}$, $\underline{\hspace{1cm}}$
- What number is $\frac{1}{10}$ less than 1?
- If ribbon costs 5¢ per inch, how much will you pay for one yard of ribbon?
- Write $5\frac{3}{4}$ as a decimal.
- $9.274 \cdot 10^4$
- $(-5 + 1)^2$

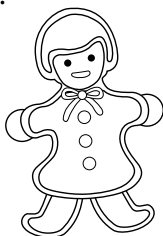
Mental Math

- 31
- $\frac{17}{25}$
- 1
- 19
- 48, 96, 192
- $\frac{9}{10}$
- \$1.80
- 5.75
- 92,740
- 16



Algebra Alley

Tammy bought 16 cookies for a party. She had 6 cookies decorated at an extra cost of 25 cents each. If the total cost of the cookies was \$9.50, how much did each plain cookie cost?

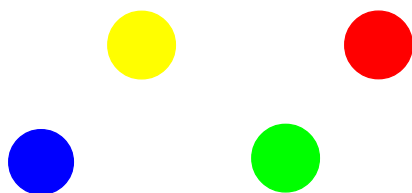


(5.03)



What's The Problem?

I have more than 9 but less than 16 marbles. There are half as many red as blue. There are two more green than blue. There is an odd number of yellow. What do I have?



(5.03)



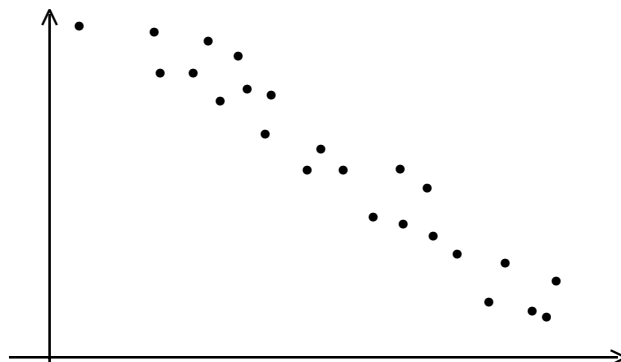
Mathematically Speaking

Explain the difference between prime and composite numbers. Give two examples of each.

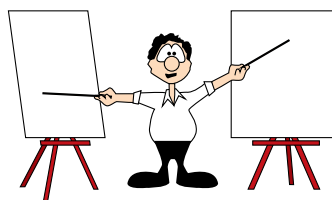
(Review)



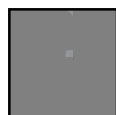
All About Data



Describe two different situations which could be represented by this scatter plot.

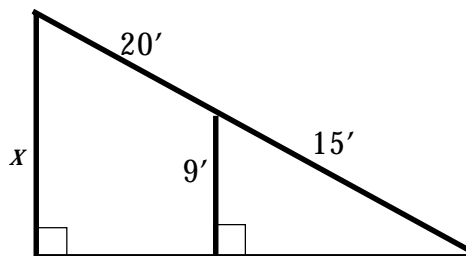


(4.01)



Geometry Wrap Up

Sam walked 15 ft. up a ramp and discovered he was 9 ft. above the ground. Pam walked an additional 20 ft. up the ramp. How far above the ground is she?



(3.02)



Keeping Skills Sharp

- $(-6)^2$ _____ $-3 \cdot 2$
(\leq , $>$, $=$)
- Solve for x : $-2x + 12 \geq 18$
- Make a stem and leaf plot for the following set of scores:
64, 88, 71, 68, 82, 87, 75, 91, 89, 83
- If $c = -5$, find the value of $6c + 4$.
- Find the volume of a rectangular prism with length 4 m, width 6 m, and height 11 m.
- $3\frac{1}{2}$ yards = _____ feet
- Which is more, 20 quarts or 10 liters?
- What is the value of $x + y + 5$ if $x = -6$ and $y = 15$?
- How many days are in 624 hours?
- $43.9 \cdot 37.5$ is between which two consecutive integers?

Write answers here:

- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____



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
15

Algebra Alley

50¢

Geometry Wrap Up

12.5 cm

Mathematically Speaking

A prime number is greater than one and has two factors, one and itself. A composite number has more than two factors. Example: Prime number -- 2, 3, 5, 7, 11..., Composite number -- 4, 6, 8, 9, 10, 12...

All About Data

Answers will vary.

What's the Problem?

2 red, 4 blue, 6 green, and either 1 or 3 yellow marbles

Keeping Skills Sharp

- >
- $x \leq 3$
- | | |
|---|---------------|
| 6 | 4, 8 |
| 7 | 1, 5 |
| 8 | 2, 3, 7, 8, 9 |
| 9 | 1 |
- 26 5. 264 m³
- $10\frac{1}{2}$ ft
- 20 quarts
- 14 9. 26 days
- 1,646 and 1,647

Mental Math

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

- What is the value of 4 pennies, 3 nickels, 5 dimes and 7 quarters?
- Write the expression for four more than x.
- $1\frac{1}{5} + 2\frac{1}{10}$
- $-6.4 \div .2$
- $-13 + 7$
- $-122 - 16$
- $-12 \cdot 6$
- $3 - (-6)$
- Solve for p: $5 + p = -7$.
- Solve for n: $\frac{n}{-4} = -5$.

Mental Math

- \$2.44
- $x + 4$
- $3\frac{3}{10}$
- 32
- 6
- 138
- 72
- 9
- $p = -12$
- $n = 20$