

8th

**SUMMER ASSIGNMENT
INCOMING 8TH GRADE**



Summer Math

Welcome to summer vacation!

We don't want you to lose your math skills over the summer, so attached are sheets to be completed for September. Please show your work on a separate piece of loose leaf, and attach that loose leaf to the worksheet. Please write your final answer on the worksheet.

It is recommended that you spread this work out over the summer, so that you don't get rusty nor are you cramming it all in at the end of August.

Enjoy the summer, and keep up your skills.

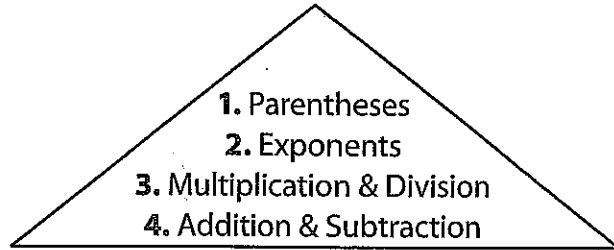
Incoming 8th grade:

Review Integer Rules for Addition, Subtraction, Multiplication and Division. There will be a quiz on Operations with Integers the first full week of school.

Miss Ruggen

Operations with Real Numbers**Order of Operations**

When solving an equation, be sure to follow the **order of operations**.



$$5 + (22 + 2^3) \div (-5 - 1) = 5 + (22 + 8) \div (-5 - 1) = 5 + 30 \div (-6) = 5 + (-5) = 0$$

Solve.

- | | |
|---|--|
| 1. $8 - 4 \cdot 5(3 - 2) + 3 =$ | 2. $12 \div (2 - 7) + 7 =$ |
| 3. $(14 - 9) + 4 =$ | 4. $\frac{3^2 - 5 \cdot 7 - 4^2}{(-4 - 7 - 12) + 8} =$ |
| 5. $9(3 \div 3) + 4(-5 \cdot 9) \div 3 =$ | 6. $3 - (6 \cdot 6) - 3 \cdot 0 =$ |
| 7. $36 \div 9 - 8 + 21 \div 3 =$ | 8. $5(3 - 8) \cdot 3 + 8 - 3 =$ |
| 9. $3 \cdot 5 + 9 \cdot 7 =$ | 10. $\frac{(5 - 9)^2 + 2}{(7 - 8)^2 \cdot 3^2} =$ |
| 11. $4^2 + 3^2 - 7^2 =$ | 12. $\frac{3^2 - 10}{4^2 - 12} =$ |
| 13. $8^2 - \frac{26}{(4 + 9)} + 4 =$ | 14. $\frac{5 \cdot 7 - (3 + 4)}{-2^2 - 2^2 + 3^2} =$ |
| 15. $\frac{4 + 2 \cdot 3 + 4 - 3}{2^2 \cdot 3^2 - 3} =$ | 16. $\frac{3 + 10 - 19 + 32}{3^2 - 1 + 2^2} =$ |
| 17. $12 \div [3 + (6 + 3)] =$ | 18. $3 \cdot (0 - 7) + 8 \div 2^2 =$ |

Lesson 3.4 Using Variables to Solve Problems

Write an equation to represent the problem, using the variable n for the unknown number. Then, solve for the value of the variable. Look at the following problem as an example.

George and Cindy are saving for bicycles. Cindy has saved \$15 less than twice as much as George has saved. Together, they have saved \$120. How much did each of them save?

Let n stand for the amount George has saved. What stands for the amount Cindy has saved? $2n - 15$ What equals the total amount? $n + (2n - 15) = 120$

Simplify: $3n - 15 = 120$ Solve.

How much has George saved? \$45

How much has Cindy saved? \$75

SHOW YOUR WORK

Solve each problem.

1. Nate and Laura picked apples. Laura picked $\frac{1}{2}$ as many as Nate picked. Together they picked 90 apples. How many did each of them pick?

Let n stand for the number Nate picked.

Equation: _____

How many apples did Nate pick? _____

How many apples did Laura pick? _____

2. Jordan travels _____ of a mile longer to school each day than Harrison does. Combined, they travel $5\frac{1}{4}$ miles to school. How far does each travel?

Let n stand for the distance Jordan travels.

Equation: _____

How far does Jordan travel? _____

How far does Harrison travel? _____

3. Two jackets have a combined cost of \$98. Jacket A costs \$12 less than Jacket B. How much does each jacket cost?

Let n stand for the cost of Jacket A.

Equation: _____

Jacket A costs _____

Jacket B costs _____

1.

2.

3.

Name _____

Solve each equation. Check your work.

1. $-14m + 5m = -18$

$m = \underline{\hspace{2cm}}$

2. $-(7x - 4) = 39$

$x = \underline{\hspace{2cm}}$

Circle the correct answer. Choose all that apply.

3. Which equations have the same solution as $4d - (12d - 3) = 43$?

a. $-8d = 46$

b. $d = -5$

c. $-8d = 40$

d. $-2(4d - 1) = 42$

For exercises 4 and 5, decide whether the student solved the equation correctly. If the solution is incorrect, explain the error and show the correct solution.

4. Raoul:

Answer _____

$$7x - 5(3x + 4) = 10$$

$$7x - 15x + 20 = 10$$

$$-8x + 20 = 10$$

$$-8x + 20 - 20 = 10 - 20$$

$$-8x = -10$$

$$\frac{-8x}{-8} = \frac{-10}{-8}$$

$$x = \frac{5}{4}$$

5. Marika

Answer _____

$$\frac{1}{5}(25 + 15h) - h = 7$$

$$5 + 3h - h = 7$$

$$5 + 2h = 7$$

$$5 + 2h - 5 = 7 - 5$$

$$2h = 2$$

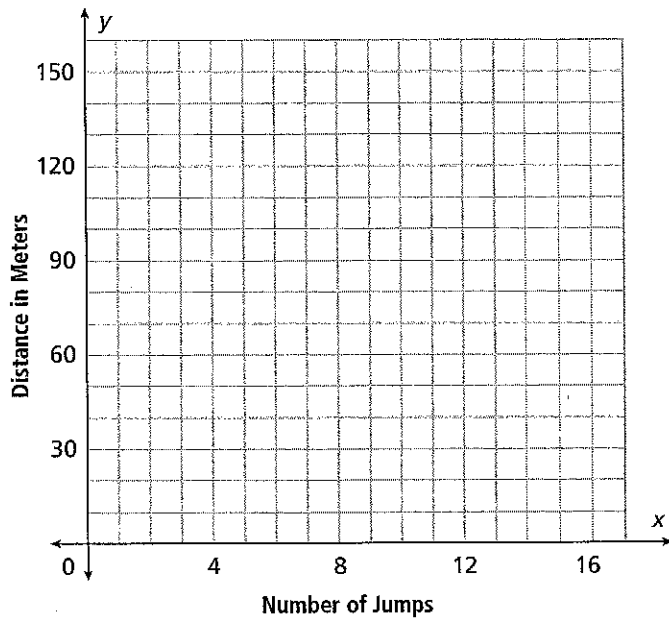
$$h = 1$$

Name _____

Use the information below to solve the problems.

There is a proportional relationship between the number of jumps a kangaroo makes and the distance the kangaroo travels in meters. A red kangaroo can travel 32 meters in 4 jumps.

1. Draw a graph to represent the proportional relationship.



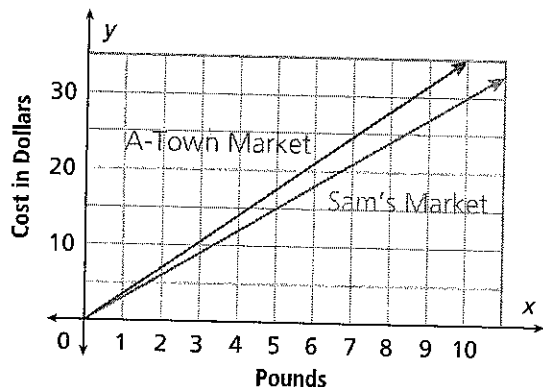
2. Use the graph to determine the distance a kangaroo can travel in 7 jumps.

Answer _____

3. What is the unit rate in meters per jump? Explain how you know.

Answer _____

Use the graph to solve the problems.



4. The graph shows the cost of tomatoes per pound at Sam's Market and at A-Town Market. Which market sells tomatoes for less money?

Answer _____

Justify your answer.

5. The cost of tomatoes at a warehouse club is less than the cost at Sam's Market or at A-Town Market. Describe where a line representing the cost of tomatoes at the warehouse club would appear on the graph.

Answer _____

Justify your answer.

To find the surface area of a prism:

- Find the area of the lateral faces.

Lateral Area = (perimeter of one base) • (height of the prism)

$$L = ph$$

$$L = (5 + 4 + 5) \cdot 3$$

$$L = 14 \cdot 3 = 42 \text{ ft.}^2$$

- Find the area of one base.

Base Area = $\frac{1}{2}$ (length of one base) • (height of the prism)

$$B = \frac{1}{2} bh$$

$$B = \frac{1}{2} (4)(3)$$

$$B = 6 \text{ ft.}^2$$

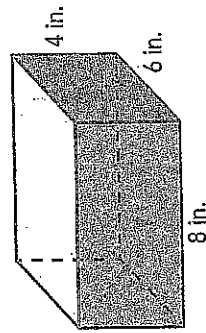
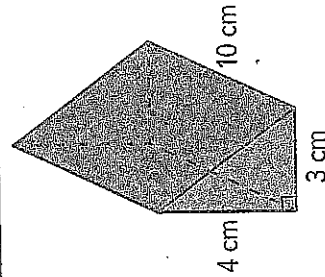
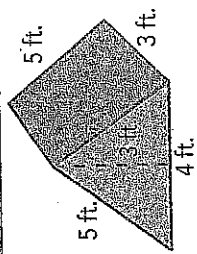
- Combine figures using the formula.

Surface Area = Lateral Area + 2 (area of one base)

$$SA = L + 2B$$

$$SA = 42 + 2(6)$$

$$SA = 54 \text{ ft.}^2$$



1. SA = _____ 2. SA = _____

The height of a cylinder is the distance between the two bases. To find the surface area of a cylinder, use the following formula:

Surface Area = 2 (area of the base) + (circumference of the base) × (height of the cylinder)

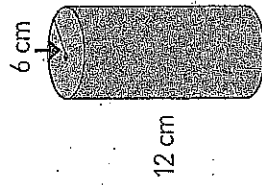
$$SA = 2\pi r^2 + 2\pi rh$$

$$SA = 2(3.14)(2)^2 + 2(3.14)(2)(10)$$

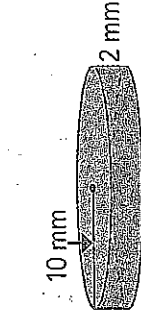
$$SA = 150.72 \text{ in.}^2$$



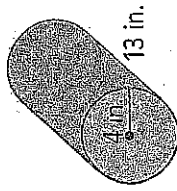
Find the surface area of each cylinder. Use $\pi = 3.14$.



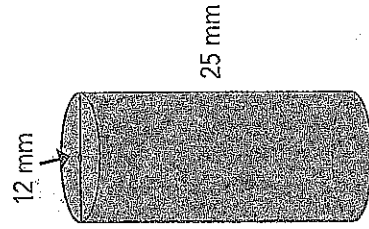
1. SA = _____



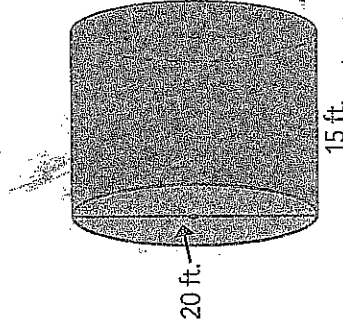
2. SA = _____



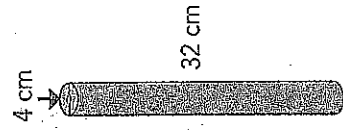
3. SA = _____



4. SA = _____



5. SA = _____



6. SA = _____