Step-by-Step 1

Lesson 1.1, Question 6

28   54   224   322   382   460   1046   1088   1784   3662

Step 1   Which of the numbers above are divisible by 2?

_____

Which of these numbers are divisible by 4?   _____

Which of these numbers are divisible by 8? _____

If a number is divisible by 4, it is also divisible by _____.

If a number is divisible by 8, it is also divisible by _____ and by _____.

Step 2   Draw a Venn diagram with 3 loops.

Label the loops "Divisible by 2," "Divisible by 4," and "Divisible by 8."

How did you draw the loops? _____

_____

Why did you draw them that way? _____

_____

Step 3   Place the numbers from *Step 1* into the Venn diagram in *Step 2*.

How did you decide where to place each number?

_____

Step 4   Write 3 different 4-digit numbers: _____, _____, _____

Place each number in the Venn diagram in *Step 2*.

Step-by-Step 2

Lesson 1.2, Question 7

Step 1   How do you know if a number is divisible by 5?

_____ How do you know if a number is divisible

by 9? _____

Write a 3-digit number that is divisible by 5 and by 9. _____

How do you know this number is divisible by 5? By 9?

_____

_____

Step 2   Which other divisibility rules work with your 3-digit number?

_____

Use the divisibility rules. List all the numbers by which your number is divisible.

_____

Divide your number by each of these numbers to determine the factor pairs.

_____

List all the factors of your number.

_____

Step 3   Look at your answers in *Step 1*.

What is the greatest 3-digit number? _____

What is the greatest 3-digit number that is divisible by 5 and by 9?   _____

What is the least 3-digit number? _____

What is the least 3-digit number that is divisible by 5 and by 9?

_____

Explain the methods you used to find the numbers.

_____

_____

Step-by-Step 3

Lesson 1.3, Question 9

Step 1   Jason earns $7/h during the week. He worked 8 h during the week.

Write an expression for his earnings during the week. _____

Jason earns $9/h on the weekend. He worked 12 h on the weekend.

Write an expression for his earnings on the weekend. _____

Combine your two expressions to write an expression for Jason's earnings.

_____

Step 2   Jason earns $7/h during the week. He worked *x* hours during the week.

Write an expression for his earnings during the week. _____

Jason earns $9/h on the weekend. He worked 5 h on the weekend.

Write an expression for his earnings on the weekend. _____

Combine your two expressions to write an expression for Jason's earnings.

_____

Step 3   How much does Jason earn if he works 5 h on the weekend? _____

Jason needs $115 to buy sports equipment.

How much more money does Jason need? _____

How many hours does Jason have to work during the week to earn this amount

of money? _____

How did you find out? _____

Step-by-Step 4

Lesson 1.4, Question 7

Step 1   The cost of a pizza with cheese and tomato toppings is $8.00.

Each extra topping costs $1.

How would you find the cost of a pizza with a certain number of extra toppings?

_____

Let *e* represent the number of extra toppings.

What is the cost of a pizza with *e* extra toppings? Write your answer as a relation.

_____

Step 2   Use your relation from *Step 1*.

What is the cost of a pizza with 5 extra toppings? _____

Step 3   The cost of the same pizza on Tuesdays is $5, plus $1 for each extra topping.

Write a relation to represent the cost of a pizza with *e* extra toppings on Tuesdays.

_____

Step 4   Use your relation from *Step 3*.

What is the cost of a pizza with 5 extra toppings on Tuesdays? _____

Step 5   Look at your answers in *Steps 2* and *4*.

How much is saved by buying the pizza on Tuesday? _____

Step-by-Step 5

Lesson 1.5, Question 3

Step 1 $3n + 4$ means "three times n plus 4."

Complete the table by substituting each value of n.

Input n	Output $3n + 4$
1	$3 \times 1 + 4 =$
2	
3	
4	

Step 2   Write the expression $4n + 3$ in words.

_____

Complete the table by substituting each value of n.

Input n	Output $4n + 3$
1	
2	
3	
4	

Step 3   What do you notice about the position of the numbers 3 and 4 in each relation?

_____

How did this affect the output?

_____

_____

Step-by-Step 6

Lesson 1.6, Question 8

Step 1 $5n + 6$ related to n could describe the amount of money I've saved after n weeks,

if I started with $6 and saved $5 per week.

Describe another real-life situation that this relation could represent.

_____

_____

Input	Output
n	$5n + 6$

Step 2   Complete this table of values for the relation.

Use Input numbers that make sense with your

real-life situation.

Step 3   Plot the data in the table on the grid.

Choose a scale for the horizontal axis

that fits your Input numbers.

Horizontal scale: 1 square = _____

Choose a scale for the vertical axis

that fits your Output numbers.

Vertical scale: 1 square = _____
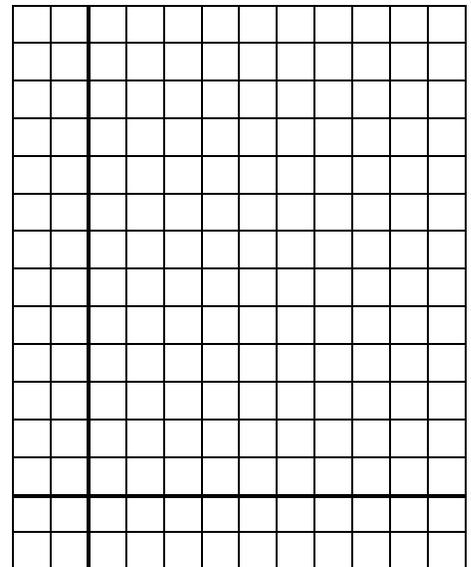
Step 4   Write two questions you could answer

using the graph, then answer each question.

_____

_____

_____

_____

_____

Step-by-Step 7

Lesson 1.7, Question 8

Step 1   Five times the number of students is 295.

Let _____ represent the number of students.

Multiply the number of students by 5: _____

The equation is: _____

Step 2   The area of a rectangle with base 7 cm and height h centimetres is 28 cm^2.

An expression to find the area of a rectangle is: base $\times$ height

The equation is: _____

Step 3   The cost of 2 tickets at x dollars each and 5 tickets at $4 each is $44.

Find the cost of 2 tickets at x dollars each: _____

Add the cost of 5 tickets at $4 each: _____

The equation is: _____

Step 4   Bhavin's age 7 years from now will be 20.

Let _____ represent Bhavin's age right now.

Add 7 to this age: _____

The equation is: _____

Step 5   Which equation was the most difficult to write? Why?

_____

_____

Step 6   Write your own mathematical sentence.

_____

Write your sentence as an equation. _____

Step-by-Step 8

Lesson 1.8, Question 8

Step 1   Let _____ represent the number of plates in each package.

Tarana bought 4 packages of plates. Write an expression

to represent the number of plates in 4 packages: _____

Add the 2 plates that Tarana started with: _____

Tarana now has 18 plates. The equation is: _____

Step 2   Use algebra tiles to model your equation.

Place tiles on the left side of the line to represent the left side of the equation.

Put tiles on the right side of the line to represent the right side of the equation.

Step 3   Use tiles to solve the equation.

The solution is: _____

So, there are _____ plates in each package.

Step 4   To verify the solution, substitute the solution from *Step 3*

into the equation from *Step 1*.

Left side = _____   Right side = _____

Is your solution correct? How do you know? _____

_____