33.1 Mathematical Relationships - Worksheet 1

1 Matt and Reuben have 14 toys between the two of them. Write an equation that describes this relationship.

Remember to define your variables!

2 Matt and Reuben have 14 toys between the two of them. Matt has 5 toys. How many toys does Reuben have?

3 Reuben has 4 more toys than Matt. Write an equation that describes this relationship.

4 Reuben has 4 more toys than Matt. Together, they have 14 toys between them. How many toys does each one have?

Use the relationship as a substitution.

33.2 Mathematical Relationships - Worksheet 2

1   A box of cans of soda contains 12 cans. Write a relationship between the number of boxes and the number of cans of soda.

2   A store has a sale on boxes of cans of soda. However, the store limit is 8 boxes per customer. If each box of soda contains 12 cans, how many cans of soda can be bought by a single customer during this sale?

3   Dr. Pepper is a math professor. Every semester, she buys each of her students a can of her favorite soda. She has 30 students in her class. If a box of cans of soda contains 12 cans, how many boxes does she need for her class?

4   In the previous question, there were two possible answers, depending on how you saw the problem. You might have had a fractional box of sodas, or you might have decided a fractional box of soda doesn't make sense and rounded up to an integer number of boxes. Is it possible that both answers are correct, or is one answer correct and the other incorrect?

33.3 Mathematical Relationships - Worksheet 3

1

Find a formula that relates the variables in each chart. (Note: Each chart is separate.)

x	y
1	4
2	5
3	6

x	y
1	3
2	6
3	9

x	y
1	3
2	5
3	7

2

Find a formula that relates the variables in each chart. (Note: Each chart is separate.)

Each of these has relatively simple formulas that only involve integers.

x	y
5	20
15	10
30	−5

x	y
3	7
5	13
8	22

x	y
2	−3
3	−5
6	−11

3

x	y
2	12
4	11
6	10

x	y
5	3
10	4
15	5

x	y
3	1
5	5
9	13

4

Find a formula that relates the variables in each chart. (Note: Each chart is separate.)

The idea for the first one may help you with the others.

x	y
1	1
2	4
3	9

x	y
1	3
2	6
3	11

x	y
1	0
2	−3
3	−8

33.4   Mathematical Relationships - Worksheet 4

1   A gym membership at Gym A costs $60 as an initiation fee plus $20 per month. Write a formula that relates the gym costs and the length of the membership.

2   A gym membership at Gym B costs $100 as an initiation fee plus $10 per month. Write a formula that relates the gym costs and the length of the membership.

3   Determine the price of 4 months of membership at each gym. Which one is the better deal if you are a member for less than 4 months? Which is the better deal if you are a member for more than 4 months?

4   Suppose you were thinking about starting an exercise routine, and that you were deciding between Gym A and Gym B. You know that you want to give it at least three months of effort, but you're not sure if you'll go beyond that. Which gym would you choose? Explain the logic of your decision.

There is no right answer. You really want to focus on whether your answer is reasonable.

33.5 Mathematical Relationships - Worksheet 5

1 Write a word problem that uses the phrase "more than" but that you cannot just add the numbers in the problem to get the correct answer. Then solve it.

2 Write a word problem that uses the phrase "fewer than" but that you cannot just subtract the numbers in the problem to get the correct answer. Then solve it.

3 Write a word problem that uses multiplication in the mathematical relationship between the variables. Then solve it.