

Problem Solving Samples

Use these boxes to show your work.

1. Parkhill School needs to order vans to transport its soccer team to the games. There are 20 players, 2 coaches, and 5 parent helpers. If a school van holds 8 passengers, how many vans will the soccer team need to get to the game?

If only 2 vans are available, how many trips will each van need to make to get all the players, coaches, and parent helpers to the game?

Suggested strategies:

- Write an equation
- Draw a picture



2. The average weight of three young elephants is 451 pounds. Rolo weighs 432 pounds, and Nandi weighs 501 pounds. What is Mavi's weight? .

Suggested strategies:

- Write an equation.
- Do a similar but simpler problem.
- Work backwards.



1

2



Use these boxes to show your work.

3. I'm thinking of two numbers whose sum is 15 and whose product is 56. What are the two numbers?

Suggested strategies:

- Guess and check.
- Write an equation.
- Do a similar but simpler problem.
- Work backwards.

3

4. I'm thinking of two numbers whose sum is 29 and whose product is 100. What are the two numbers?

Suggested strategies:

- Guess and check.
- Write an equation.
- Do a similar but simpler problem.
- Work backwards.

4

5. I'm thinking of two numbers whose sum is 13 and whose product is 42. What are the two numbers?

Suggested strategies:

- Guess and check.
- Write an equation.
- Do a similar but simpler problem.
- Work backwards.

5





6. The fence around a rectangular field has a perimeter of 32 feet. The width of the field is 7 feet. Find the length of the field and the area of the field.

Suggested strategies:

- Guess and check.
- Write an equation.
- Do a similar but simpler problem.
- Work backwards.

6

7. Grandma Macy has seven coins in her purse. She has twice as many dimes as quarters. She has 57 cents. What are the coins in Grandma Macy's purse?

Suggested strategies:

- Draw a picture.
- Make a model.
- Guess and check.



7

8. Pearl has 75 cents. She has exactly 2 quarters. Show all the different coin combinations she can have.

Suggested strategies:

- Make an organized list.
- Make a model.
- Find a pattern



8



9. Joy is taking care of the plants at her neighbor's house for two weeks. The lily needs to be watered every third day; the violet needs to be watered every fourth day, and the spider plant needs to be watered every sixth day. Eventually, all the plants will be watered on the same day. On which day will that happen?

Suggested strategies:

- Make an organized list.
- Make a model.
- Find a pattern

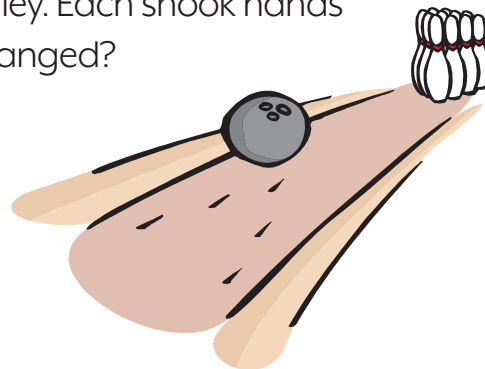


9

10. Billy, Carol, Devon, and Ethan met at the bowling alley. Each shook hands with the others. How many handshakes were exchanged?

Suggested strategies:

- Draw a diagram. (Each handshake scenario makes a different geometric design.)
- Act it out.
- Find a pattern.
- Write an equation.



10



11. Anita, Billy, Carol, Devon, and Ethan met at the bowling alley. Each shook hands with the others. How many handshakes were exchanged?

11

12. Anita, Billy, Carol, Devon, Ethan, and Freida met at the bowling alley. Each shook hands with the others. How many handshakes were exchanged?

12

Problem Solving Samples

ANSWERS

Use these boxes to show your work.

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- Write an equation
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2. The average weight of three young elephants is 451 pounds. Rolo weighs 432 pounds, and Nandi weighs 501 pounds. What is Mavi's weight?

Suggested strategies:

- Write an equation.
- Do a similar but simpler problem.
- Work backwards.



$$20 + 2 + 5 = 27$$

$$27 \div 8 = 3 \text{ R}3$$

4 vans

$$16 + 16 = 32$$

$$16 < 27$$

$$32 > 27$$

2 trips

$$451 \times 3 = 1353$$

$$501 + 432 = 933$$

$$1353 - 933 = 420$$

420 pounds



Use these boxes to show your work.

3. I'm thinking of two numbers whose sum is 15 and whose product is 56. What are the two numbers?

Suggested strategies:

- Guess and check.
- Write an equation.
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- Work backwards.

3

$$7 + 8 = 15$$

$$7 \times 8 = 56$$

7, 8

4. I'm thinking of two numbers whose sum is 29 and whose product is 100. What are the two numbers?

Suggested strategies:

- Guess and check.
- Write an equation.
- Do a similar but simpler problem.
- Work backwards.

4

$$4 + 25 = 100$$

$$4 \times 25 = 100$$

4, 25

5. I'm thinking of two numbers whose sum is 13 and whose product is 42. What are the two numbers?

Suggested strategies:

- Guess and check.
- Write an equation.
- Do a similar but simpler problem.
- Work backwards.

5

$$6 + 7 = 13$$

$$6 \times 7 = 42$$

6, 7





6. The fence around a rectangular field has a perimeter of 32 feet. The width of the field is 7 feet. Find the length of the field and the area of the field.

Suggested strategies:

- Guess and check.
- Write an equation.
- Do a similar but simpler problem.
- Work backwards.

6

$32 = 7 + 7 + l + l$

$32 = 14 + 2l$

$18 = 2l, l = 9$

length = 9 ft.

$A = l \times w$

$A = 7 \times 9$

area = 63 ft.²

7. Grandma Macy has seven coins in her purse. She has twice as many dimes as quarters. She has 57 cents. What are the coins in Grandma Macy's purse?

Suggested strategies:

- Draw a picture.
- Make a model.
- Guess and check.



7

one quarter

two dimes

two nickels

two pennies

8. Pearl has 75 cents. She has exactly 2 quarters. Show all the different coin combinations she can have.

Suggested strategies:

- Make an organized list.
- Make a model.
- Find a pattern



8

Answers may vary. Example:

Quarter	Dime	Nickel	Penny
2			25
2		1	20
2		2	15
2	1		15
2		3	10
2	1	1	10
2	2		5
2	1	2	5
2	1	3	
2	2	1	



9. Joy is taking care of the plants at her neighbor's house for two weeks. The lily needs to be watered every third day; the violet needs to be watered every fourth day, and the spider plant needs to be watered every sixth day. Eventually, all the plants will be watered on the same day. On which day will that happen?

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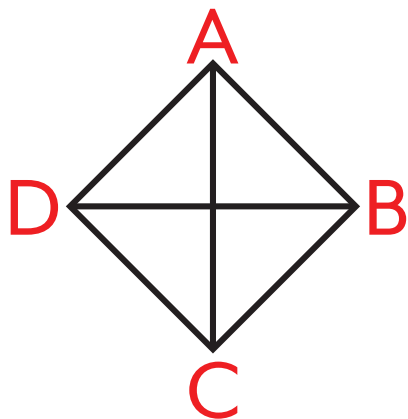
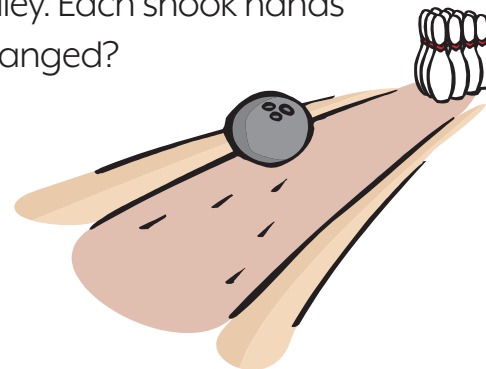
All the plants will be watered on day 12.

Day	Lily	Violet	Spider
1			
2			
3	✓		
4		✓	
5			
6	✓		✓
7			
8		✓	
9	✓		
10			
11			
12	✓	✓	✓
13			
14			

10. Billy, Carol, Devon, and Ethan met at the bowling alley. Each shook hands with the others. How many handshakes were exchanged?

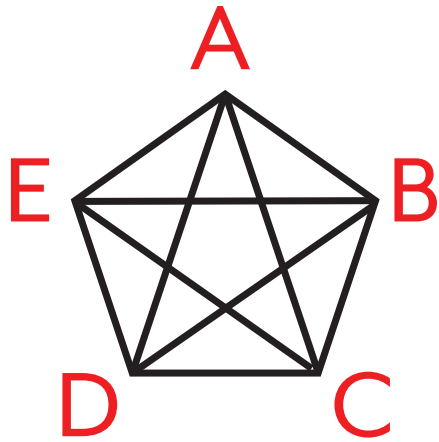
Suggested strategies:

- Draw a diagram. (Each handshake scenario makes a different geometric design.)
- Act it out.
- Find a pattern.
- Write an equation.



6 handshakes
(1 + 2 + 3 = 6)

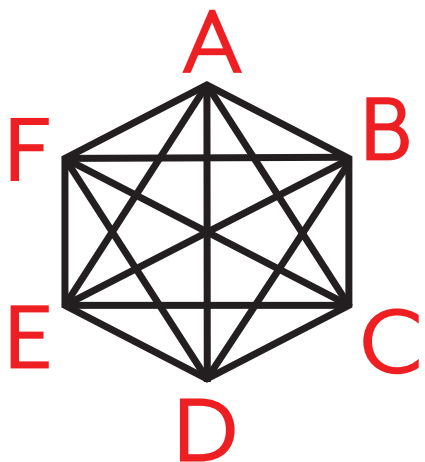
11. Anita, Billy, Carol, Devon, and Ethan met at the bowling alley. Each shook hands with the others. How many handshakes were exchanged?



10 handshakes
 $(1 + 2 + 3 + 4 = 10)$

11

12. Anita, Billy, Carol, Devon, Ethan, and Freida met at the bowling alley. Each shook hands with the others. How many handshakes were exchanged?



15 handshakes
 $(1 + 2 + 3 + 4 + 5 = 15)$

12