

# Thursday 4<sup>th</sup> June

## Year 5/6: Word Problems

## Introduction

Mason is creating word problems from equations which have been built in stages. Can you match the word problems to the equations?

I think of a number. I add 14. My answer is 20.

I think of a number. I subtract 8. My answer is 17.

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$n$	$n - 8$	$n - 8 = 17$
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$n$	$2n$	$2n + 10$	$2n + 10 = 18$
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$n$	$n + 14$	$n + 14 = 20$
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Can you create a word problem for the remaining equation?

## Introduction

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I think of a number. I add 14. My answer is 20.

I think of a number. I subtract 8. My answer is 17.

I think of a number. I multiply it by 2. I add 10. My answer is 18.

$n$

$n - 8$

$n - 8 = 17$

$n$

$2n$

$2n + 10$

$2n + 10 = 18$

$n$

$n + 14$

$n + 14 = 20$

Can you create a word problem for the remaining equation?

## Varied Fluency 1

Use the equation below to fill in the gaps in the word problem.

$$p \div 3 = 9$$

I think of a number. I divide it by \_\_\_\_ and my answer is \_\_\_\_.



## Varied Fluency 1

Use the equation below to fill in the gaps in the word problem.

$$p \div 3 = 9$$

I think of a number. I divide it by **3** and my answer is **9**.

## Varied Fluency 2

In which of the options below does the unknown value equal 4?

A.  $25 - w = 21$



B. 

C. Kerry had 17 sweets. Miles stole some. Kerry has 13 sweets left. How many did Miles steal?

## Varied Fluency 2

In which of the options below does the unknown value equal 4?

A.  $25 - w = 21$

B.  = 

C. Kerry had 17 sweets. Miles stole some. Kerry has 13 sweets left. How many did Miles steal?

**A and C**

### Varied Fluency 3

**Circle the equation which matches the word problem below:**

**Theo thinks of a number. He multiplies it by 4 and then subtracts 3. His answer is 13. What was his starting number?**

$$3n - 4 = 13$$

$$4n - 3 = 13$$

$$4 - 3 = 13$$



### Varied Fluency 3

Circle the equation which matches the word problem below:

Theo thinks of a number. He multiplies it by 4 and then subtracts 3. His answer is 13. What was his starting number?

$$3n - 4 = 13$$

$$4n - 3 = 13$$

$$4 - 3 = 13$$

### Varied Fluency 4

**True or false? The equation matches the word problem below.**

$$28 = b + 17$$

**Tana lines up 28 building blocks. The blocks are yellow or blue. She uses 17 yellow blocks. How many blue blocks does she use?**

### Varied Fluency 4

**True or false? The equation matches the word problem below.**

$$28 = b + 17$$

**Tana lines up 28 building blocks. The blocks are yellow or blue. She uses 17 yellow blocks. How many blue blocks does she use?**

**True**

## Problem Solving 1

Use some of the cards to create an algebraic equation.

$$2.5 + \div 7 4$$

Draw an image using concrete materials and write a word problem to match the equation created.



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Use some of the cards to create an algebraic equation.

$$2.5 \quad + \quad \div \quad 7 \quad 4$$

Draw an image using concrete materials and write a word problem to match the equation created.

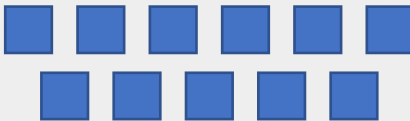
Various answers, for example:  $n \div 7 = 2.5$ .

The image and word problem must match the equation.

## Reasoning 1

Which is the odd one out?

A. I think of a number. I multiply it by 4. I add 3. My answer is 11.

B.  = 

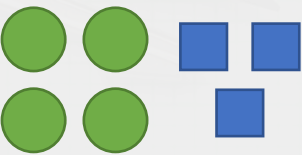
C.  $3n + 8 = 11$

Explain your answer.

## Reasoning 1

Which is the odd one out?

A. I think of a number. I multiply it by 4. I add 3. My answer is 11.

B.  = 

C.  $3n + 8 = 11$

Explain your answer.

Option C because...

## Reasoning 1

Which is the odd one out?

A. I think of a number. I multiply it by 4. I add 3. My answer is 11.

B. 

C.  $3n + 8 = 11$

Explain your answer.

Option C because the unknown number is 1. In the other options it is 2.



## Reasoning 2

Dan and Sangeet are creating word problems based on the equation below.

$$4e + f = 156$$



Dan

I put 4 marbles and one toy car on a scale. Together they weigh 156g.

I think of a number. I add another number to it and multiply by 4 to make 156.



Sangeet

Who is incorrect? Explain your answer.

## Reasoning 2

Dan and Sangeet are creating word problems based on the equation below.

$$4e + f = 156$$



Dan

I put 4 marbles and one toy car on a scale. Together they weigh 156g.

I think of a number. I add another number to it and multiply by 4 to make 156.



Sangeet

Who is incorrect? Explain your answer.

Sangeet is incorrect because...

## Reasoning 2

Dan and Sangeet are creating word problems based on the equation below.

$$4e + f = 156$$



Dan

I put 4 marbles and one toy car on a scale. Together they weigh 156g.

I think of a number. I add another number to it and multiply by 4 to make 156.



Sangeet

Who is incorrect? Explain your answer.

**Sangeet is incorrect because she only needs to multiply  $e$  (the marbles) by 4. Her order of operations is incorrect.**

# Year 5 and Year 6 Developing

1a. Use the equation below to fill in the gaps in the word problem.

$$p + 3 = 8$$

I think of a number. I add \_\_\_\_ to it and my answer is \_\_\_\_.



6 VF

1b. Use the equation below to fill in the gaps in the word problem.

$$s - 6 = 10$$



I think of a number. I subtract \_\_\_\_ from it and my answer is \_\_\_\_.



6 VF

2a. In which of the options below does the unknown value equal 5?

A.  $2f = 10$

B.  = 

C. Michael had 14 grapes. He ate some of them. He has 8 grapes left. How many grapes did Michael eat?



6 VF

2b. In which of the options below does the unknown value equal 3?

A.  $17 = y + 14$

B.  = 

C. Kiara has collected 11 models. Her mum buys her some more. Now Kiara has 16 models. How many did her mum buy?



6 VF

3a. Circle the equation which matches the word problem below.

Cassi thinks of a number. She subtracts 9 from it. Her answer is 4. What was her starting number?

$4n = 9$

$n = 4 - 9$

$4 = n - 9$

3b. Circle the equation which matches the word problem below.

Judah thinks of a number. He multiplies it by 2. His answer is 14. What was his starting number?

$2n = 14$

$2 = 14n$

$n + 2 = 14$



1a. Use some of the cards to create an algebraic equation.

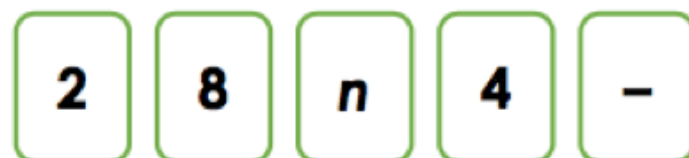


Draw an image using concrete materials and write a word problem to match the equation created.



6 PS

1b. Use some of the cards to create an algebraic equation.



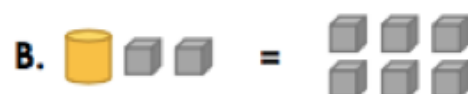
Draw an image using concrete materials and write a word problem to match the equation created.



6 PS

2a. Which is the odd one out?

A. I think of a number. I multiply it by 2.  
My answer is 8.



C.  $n - 1 = 2$

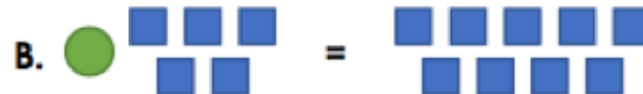


Explain your answer.

6 R

2b. Which is the odd one out?

A. I think of a number. I subtract 4 from it.  
My answer is 3.



C.  $12 = n + 5$



Explain your answer.

6 R

# Year 6 Expected

5a. Use the equation below to fill in the gaps in the word problem.

$$6r = 48$$

I think of a number. I multiply it by \_\_\_\_ and my answer is \_\_\_\_.



6 VF

5b. Use the equation below to fill in the gaps in the word problem.

$$2.5 = k \div 4$$



I think of a number. I divide it by \_\_\_\_ and my answer is \_\_\_\_.



6 VF

6a. In which of the options below does the unknown value equal 7?

A.  $4 = 24 \div h$

B.  = 



C. Three friends each have the same number of marbles. All together they have 21 marbles. How many do they have each?



6 VF

6b. In which of the options below does the unknown value equal 6?

A.  $23 - j = 15$

B.  = 

C. Fran has 36 birthday cards. She divides them into a number of equal piles. There are 6 cards in each pile. How many piles has she made?



6 VF

7a. Circle the equation which matches the word problem below.

Sunia thinks of a number. She multiplies it by 5 and then adds 3. Her answer is 2.5. What was her starting number?

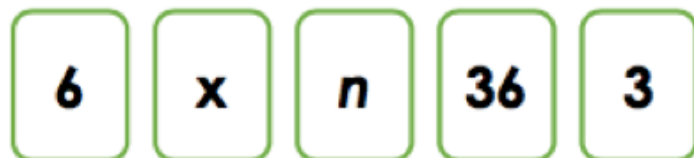
$5n + 3 = 2.5$      $2.5 = 3n + 5$      $5n + 3n = 2.5$

7b. Circle the equation which matches the word problem below.

Will thinks of a number. He divides it by 4 and then subtracts 2. His answer is 2. What is his starting number?

$2 = 4n - 2$      $2 = n \div 2 - 4$      $2 = n \div 4 - 2$

4a. Use some of the cards to create an algebraic equation.



Draw an image using concrete materials and write a word problem to match the equation created.



6 PS

4b. Use some of the cards to create an algebraic equation.



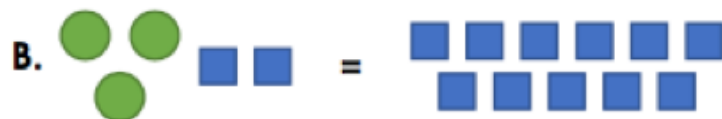
Draw an image using concrete materials and write a word problem to match the equation created.



6 PS

5a. Which is the odd one out?

A. I think of a number. I divide it by 3. I add 8. My answer is 12.



C.  $\frac{1}{4}n - 2 = 1$

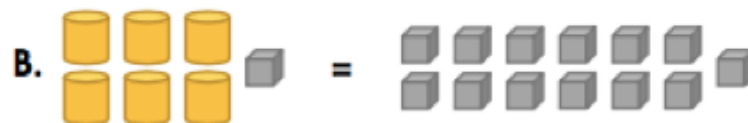


Explain your answer.

6 R

5b. Which is the odd one out?

A. I think of a number. I multiply it by 10. I subtract 3. My answer is 22.



C.  $5n + 6 = 16$



Explain your answer.

6 R

# Year 6 Greater Depth

9a. Use the equation below to fill in the gaps in the word problem.

$$c \div 8 - 9 = -6$$

I think of a number. I \_\_\_\_\_ it by \_\_\_\_\_ and subtract \_\_\_\_\_. My answer is \_\_\_\_\_.



6 VF

9b. Use the equation below to fill in the gaps in the word problem.

$$0.3n \div 9 = 0.6$$



I think of a number. I \_\_\_\_\_ it by \_\_\_\_\_ and divide it by \_\_\_\_\_. My answer is \_\_\_\_\_.



6 VF

10a. In which of the options below does the unknown value equal 4?

A.  $17.75 - w = 13\frac{1}{4}$

B.  = 

C. Chloe has 170cm of pipe. She cuts it into some equal pieces. Each piece is 42.5cm long. How many pieces does she have?



6 VF

10b. In which of the options below does the unknown value equal 9?

A.  $0.5y - 3 = 1.5$

B.  = 

C. Tegid did a sponsored walk. When he was three quarters of the way through, he had walked 7.5km. How long was his walk in total?



6 VF

11a. Circle the equation which matches the word problem below.

Huey thinks of a number. He multiplies it by two thirds and then subtracts 1. His answer is 3. What was his starting number?

$$3 - 1 = \frac{2}{3}n$$

$$\frac{2}{3}n - 1 = 3$$

$$1n - \frac{2}{3} = 3$$



11b. Circle the equation which matches the word problem below.

Talia thinks of a number. She multiplies it by 0.25 and then subtracts 3. Her answer is -1. What was her starting number?

$$0.25n - 3 = 1$$

$$0.75n - 3 = -1$$

$$-1 = 0.25n - 3$$





7a. Use some of the cards to create an algebraic equation.



Draw an image using concrete materials and write a word problem to match the equation created.



6 PS

7b. Use some of the cards to create an algebraic equation.



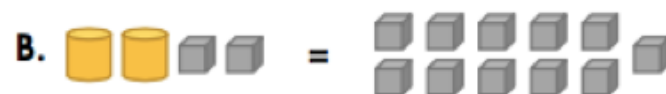
Draw an image using concrete materials and write a word problem to match the equation created.



6 PS

8a. Which is the odd one out?

A. I think of a number. I multiply it by 5. I subtract 11. My answer is 9.



C.  $\frac{1}{4}n + 7 = 8$

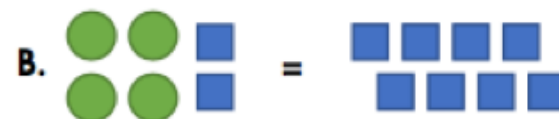


Explain your answer.

6 R

8b. Which is the odd one out?

A. I think of a number. I multiply it by 2. I add 0.5. My answer is 3.5.



C.  $9n - 9.3 = -0.3$



Explain your answer.

6 R