



# **Techniques for Solving Math Word Problems**

Kansas MTSS

October 13, 2021

## **Presenter**

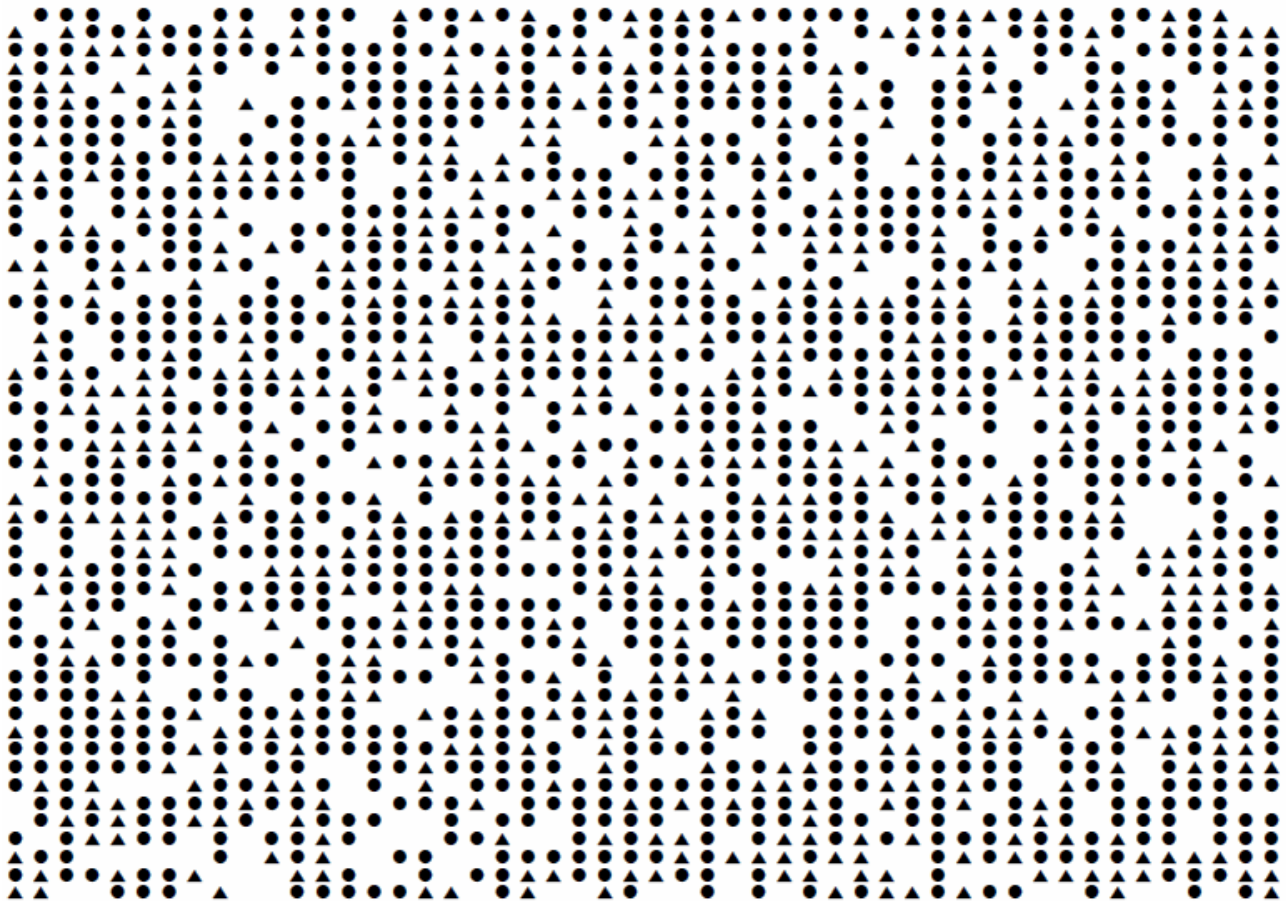
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MARS Task: Counting Trees  
[www.map.mathshell.org/tasks](http://www.map.mathshell.org/tasks)



This diagram shows some trees in a tree farm. The circles ● show old trees and the triangles ▲ show young trees. Tom wants to know how many trees there are of each type, but says it would take too long counting them all, one-by-one.

1. What method could he use to estimate the number of trees of each type?  
Explain your method fully.
2. On your worksheet, use your method to estimate the number of:
  - (a) Old trees
  - (b) Young trees

Mathematics Assessment Project  
BALANCED ASSESSMENT  
Summative Assessment Tasks for Middle School  
[www.map.mathshell.org](http://www.map.mathshell.org)

## Missing Number – Examples

### Pocket Money

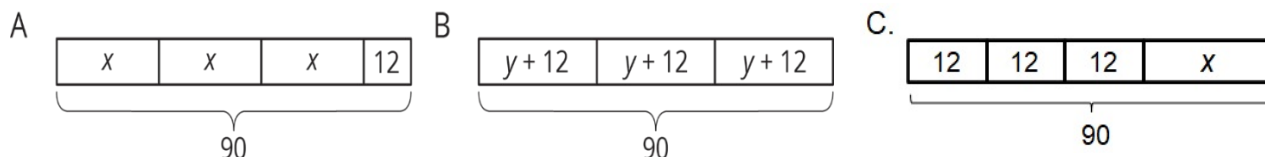
Marcos has \$17 altogether. He has \$ in his hand and the rest of the money in his pocket. How much money does he have in his pocket?

### Cell Phone Deal

A phone originally sells for \$. It is now on sale for  $\frac{1}{5}$  off the original price. April has a coupon for an extra 10% off the sale price. To the nearest dollar, how much less than the original price will April pay for the phone?

*from Ready Math Grade 7 Lesson 16*

## Matching Models to Problems



**Story 1:** Lin had 90 flyers to hang up around the school. She gave 12 flyers to each of three volunteers. Then she took the remaining flyers and divided them up equally between the three volunteers.

**Story 2:** Lin had 90 flyers to hang up around the school. After giving 12 flyers to each of three volunteers, how many did she have left to hang up by herself?

**Story 3:** Lin had 90 flyers to hang up around the school. After giving the same number of flyers to each of three volunteers, she had 12 left to hang up by herself.

Match the word problem with the correct expressions at the bottom.

1. Write an expression to show a number increased by **11**.
2. Write an expression to show a number decreased by **11**.
3. Write an expression to show **y** less than **3.5**.
4. Write an expression to show the sum of **x** and **y** reduced by **11**.
5. Write an expression to show **5** less than **y**, plus **x**.

$(x + y) - 11$

$y - 11$

$5 - y + x$

$3.5 - y$

$11 - (x + y)$

$y + 11$

$y - 5 + x$

$y - 3.5$

Adapted from EngageNY/Eureka Math Grade 6 Module 4 Lesson 9 (2016)

### Matching Problems to an Expression

- 4** Which situation could be represented by the following expression? Circle all that apply.

$48 + 2x$

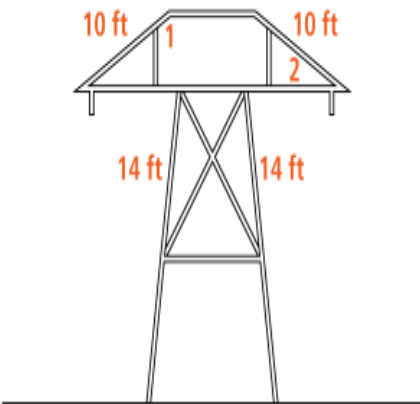
- A** Sara's phone contract costs her \$48 per month, but she pays an additional \$2 for every minute she goes over her allotted minutes.
- B** A fast food restaurant expects to use 48 eggs per day plus an additional 2 eggs for every customer coming in for breakfast.
- C** A florist began the day with 48 roses and sold approximately 2 roses per hour.
- D** Visitors to an amusement park pay an entrance fee of \$48 plus \$2 for each ticket purchased for the rides.

Ready Classroom Grade 6 Lesson 19 Practice p. 201 (2020)

## Could This Be the Answer?

All horizontal beams of the high-voltage transmission tower are parallel to the ground. The top section is an isosceles trapezoid. The center section is an isosceles trapezoid.

If the measure of angle 1 =  $128^\circ$ , what is the measure of angle 2?



Could  $120^\circ$  be the answer? Why or why not?

Could  $10^\circ$  be the answer? Why or why not?

Could  $40^\circ$  be the answer? Why or why not?

Adapted from enVision Math Geometry Grade 6 Topic 6 Lesson 2 (2019)

## Board the Roller Coaster

Jackson needs to be  inches taller in order to ride the roller coaster. Since he can't wait, he puts on a pair of boots that adds  inches to his height and slips an insole inside the boot that adds half as much as the boot does to his height. Will this make Jackson appear tall enough to ride the roller coaster?

Adapted from EngageNY/Eureka Math Grade 5 Module 3 (2016)

## Best Deal for the Sweater

One store is having a 50% off sale. Another store has a 40% discount, with an additional 15% off of the sale price. Which sale should you take advantage of if you want the best reduction on a sweater that costs \$68.79?

**Commit to ONE of the following without actually solving:**

- A. The first store will give me the best price on the sweater.
- B. The second store will give me the best price on the sweater.
- C. It doesn't matter. The cost of the sweater will be the same in both stores.

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For the "Best Deal" Problem - Examples of Turn and Talk with Sentence Frames

**Partner share. Complete the following:**

- *"What I first noticed about the problem was \_\_\_\_."*
- *"I believe my answer makes sense because \_\_\_\_."*

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More examples of specific sentence frames for the "Best Deal" problem:

- A. The store with the best reduction is \_\_ because \_\_\_\_.
- B. The sales at the two stores are similar because they both \_\_\_\_.
- C. The sales at the two stores are different because \_\_\_\_.
- D. Comparing the sales at the two stores is tricky because \_\_\_\_.