

Week 5 Day 1 - Distribution

We have 2 ideas left in the algebra chapter before I am confident you are ready to crush grade 9.

Distribution and Word Problems.

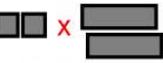
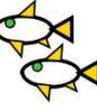
We start with distribution - essentially $2(m-1)$

Definition – the action of sharing something equally between several groups. (from a dictionary

- I distribute the newspapers on my paper route, 1 to each house (from Schubert's head)

Distribution

$2(m-1)$ When you do it I want to see the arrows

What this means with pictures		not
if	then	
$2 =$ 	$2(2) =$ 	$2(2) =$ 
$m =$ 	$2(m) =$ 	$2(m) =$ 
goldie = 	$2(\text{goldie}) =$ 	no symbols 2 (is for counting)

So $2(m-1)$ is **2 groups** of $(m-1)$

 **1 group**
 **2 groups**

Example 1 from the book (page 208)

If a rectangular garden is 2 meters longer than the shed, 4 m wide and has an area of 20 m^2 ,

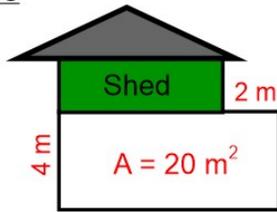
what is the length of the shed?

This is all you get, no picture you make, no equation you make then you need to solve.

Steps for a word problem that I follow (and it works)

1. Read question through completely
2. Go back read again and **circle / underline** important / key words (I do this in my head now)
3. Use key words to make picture / sketch then the equation
4. Re-Check that this is correct (if not there is no point in solving)
5. Solve
6. Check answer to see if it makes sense (the length of the shed I got - 2 meters? nope)
7. Write short sentence with answer () the sheds length is _____ meters.)

Picture



Make sure your picture is reasonable accurate
if the piece past the shed is 2 the width should be double

Equation $A = l \times w$
 $20 = 4 (s + 2)$

The problem is students don't know where to start
Start with general formula for area
Then sub in what you undelined from the question

I will now solve by 3 methods, you of need to know them all to be good at math.

Method 1 work better here and M 2 there. (Integers can be solved with Chips, number line, money)

Method 1

$$4(s + 2) = 20$$

we will remove the 4 first, this means $4 \times (\text{bracket}) = 20$

$$\begin{array}{r} 4(s + 2) = 20 \\ \underline{4 } \\ (s + 2) = 5 \\ \underline{-2 } \\ s = 3 \end{array}$$

so divide both sides by 4

Now cancel

Now move + 2

This makes sense

if you have $\frac{8 \times 4}{4} = \frac{32}{4} = 8$

$$\left(\begin{array}{l} \text{or } \frac{8 \times 4}{4} = \frac{8 \times 4}{4} = 2 \times 4 = 8 \\ \frac{8 \times 4}{4} = 8 \times 1 = 8 \end{array} \right)$$

only one or the other

Sentence Answer - The shed is 3 meters long

Method 2

$$4(s + 2) = 20$$

we will **distribute**, this means multiply 4 into the bracket

$$4(s + 2) = 20$$

You do not have to rewrite the question but I need to **see the arrows**

$$4(s) + 4(2) = 20$$

Essentially I am simplifying the left side

$$4s + 8 = 20$$

So with it cleaned up. **Now remove + 8**

Now cancel

$$\begin{array}{r} 4s + 8 = 20 \\ \underline{-8 } \\ 4s = 12 \\ \underline{4 } \\ s = 3 \end{array}$$

Now cancel the 4s

This makes sense

Sentence Answer - The shed is 3 meters long

Method 3 Algebra Tiles

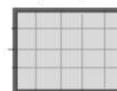
$$4(s + 2) = 20$$

so



we will visually **distribute**, this means multiply 4 into the bracket
Remember 4 (Goldie) is 4 gold fish, redrawn 4 times)

Remember to make the 20 into groups of 4 to cut equally
to save time, draw a grid and shade quickly



Now **circle one group** (essentially dividing by 4)

Now remove the +1 from the left

$$s = 3$$

This makes sense

Sentence Answer - The shed is 3 meters long

So all 3 methods give you the same answer, done 3 different ways.

For most questions on the test and in grade 9, you only need to use 1 way,

but I may ask you to show a different way or to show with algebra tiles.

Your work - Read Ex 2 page 210

- Summarize the Key ideas for anything new
- Do the 1 of each of the 2 show you know on pages 209 and 210.

Please ensure your understanding, if you “trick me” and read through the notes quickly or not at all,
you do not write the notes and don’t really understand,

you are making just making grade 9 a lot harder and your stress levels next year a lot greater.

So you will not be “tricking me” or your teacher next year you will be essentially limiting yourself.

I want everyone’s mark to go up next year, generally they stay the same or go down.