WOODSIDE HIGH SCHOOL
TASK GRID 6: YEAR 8

WHAT TO STUDY AT HOME?

Using your school timetable as a guide, work through the tasks outlined below. Use the 'how to study at home' sheet to help you plan your time and approach to self study.

SUBJECT	TASK
ENGLISH **These tasks should take: 2 lessons per memo**	Scheme: Media and Advertisement Week 1: Your first week will be planning an advertisement campaign. You will need to select one of the items below and to advertise to people in different settings including TV, bus stops, posters, magazines, social media etc. ITEMS (select 1 only): new brand of trainers, new brand of lipstick, new brand of chocolate, new brand of shampoo. Follow the memo's below. Each Memo should take you 2 lessons. **Memo 1** Right, it's time to start earning your wages. You know the type of product you're working on for the new season. It's totally new, and I believe you have some ideas already so get cracking! Think future, think young, think trendy. We've only got a couple of weeks left to make this product big.

What I want from you is:

· A brand name - make this snappy!

· A brilliant set of product designs - more exciting than anything anyone else has produced.

· A logo for the product - make it stand out!

· A 200 word description of the product - adjectives, adjectives, adjectives! You need to explain why this thing is the biggest new product of the millennium. Persuade me to buy it!

· A 200 word description of who is going to buy this product. I want to know who they are, how old they are, what they like, what they don't like… I want to know your target audience inside out.

MEMO 2

It's time to get creative! The product development team have done a fantastic job in creating a new product. You have your brand name, product design and audience description - now it's time to sell it! Get yourselves in gear and earn me some money!

What I want from you is:

· An advertising schedule: A list of all the places you are going to put your advertising. I want specific details - which magazines? Which TV channels and programmes? Which newspapers? Which bus stops?

· A slogan: make this catchy! People need to remember it!

· A design for a magazine advert. Good image and colour and creative language please.

· A storyboard for a TV advert. We've only got enough money for a two minute slot, so make it count. Think exotic, exciting, entertaining!

MEMO 3:

You're nearly there! You've got the product designs and the advertising ideas - you're nearly ready to present all these to the other advertising teams.

	What you still need to do is: · Check that everyone in the team is happy with all the designs and descriptions, and that there are no mistakes in the writing. · Write all your designs and descriptions out in neat and arrange them into a fabulous, eye-catching design on sugar paper. Don't forget a title, with the product name. Make sure they look good - the better they look, the more likely your client is to go for your advertising ideas. · You should already have a TV advert storyboard - go through this again and make sure that you improve on any ideas you have.
MATHS **These tasks should take you:** **40-60 minutes per lesson**	**Lesson 1:** **Retrieval Practice- Flashback 4** **Copy and complete each question and write out an explanation of the key word, check that you can say and spell it correctly.**

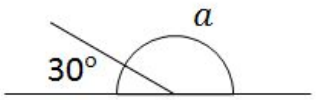
1) Which of the numbers are prime?

2, 4, 5, 9, 21

2) What is the Highest Common Factor of 12 and 18?

3) A bag contains 3 red and 4 blue counters.
A counter is taken at random.
What is the probability the counter is red?

4) Work out the value of a.



Vocabulary check: Regular

<u>Topic: Multiply out a single bracket.</u>

- **Write a summary of what you know about brackets in your book.**
- **List examples of using brackets in everyday life or other subjects.**

Copy and complete the following:

1) 5×2

2) 5×-2

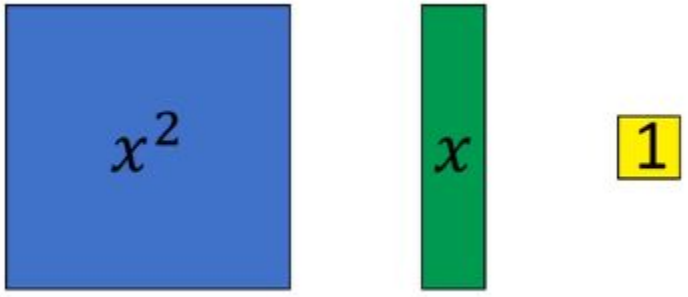
3) $5 \times x$

4) $5 \times 2x$

5) $-5 \times 2x$

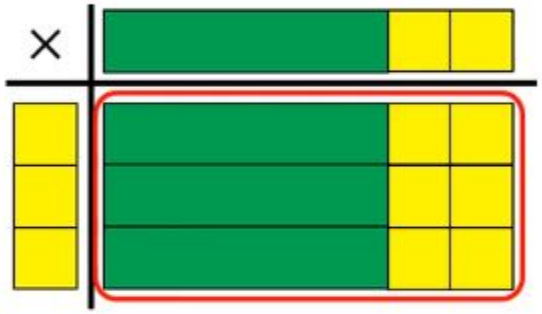
6) $5x \times 2x$

Read, copy and understand the following:



There are two methods that you could use to expand brackets.
Example 1:
Method 1:

Expand $3(x + 2)$



$3(x + 2) \equiv 3x + 6$

Method 2:

Expand $3(x + 2)$

Expand $3(x+2)$

x	2
x	2
x	2

$3(x+2) \equiv 3x+6$

Example 2:
Method 1:

Expand $3(2x + 3)$

$3(2x + 3) \equiv 6x + 9$

Method 2:

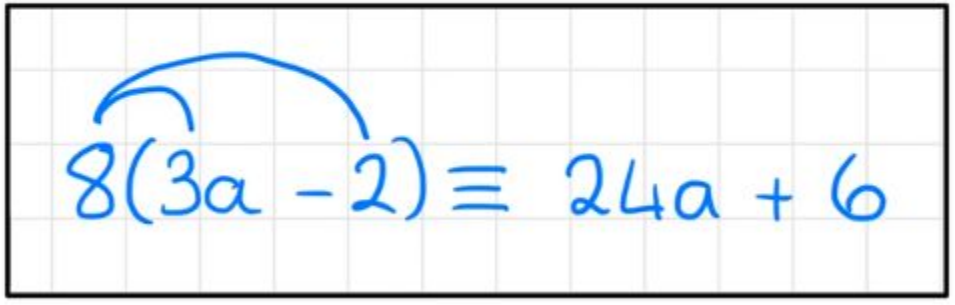
Expand $3(2x+3)$

$2x$	3
$2x$	3
$2x$	3

$3(2x+3) \equiv 6x+9$

In each of the examples: explain the method to get to the answer (in your exercise books)

Spot the mistake



Complete the following questions in your book.

1 The bar model shows $b + 5$

b	5

a) Discuss why this bar model shows $2(b + 5)$

b	5
b	5

b) Draw a bar model to represent $3(b + 5)$

2 Use the bar models to expand the brackets.

a) $2(x + 3) \equiv$ _____

x	3
x	3

b) $5(p + 7) \equiv$ _____

p	7
p	7
p	7
p	7
p	7

3 Draw bar models to help you with the expansions.

a) $3(t + 2) \equiv$ _____

b) $4(5 + k) \equiv$ _____

c) $2(3p + 1) \equiv$ _____

4 Amir has expanded this bracket.

$$2(k + 5) \equiv 2 \times k + 2 \times 5$$
$$\equiv 2k + 10$$

Expand the brackets.

a) $7(y + 4) \equiv$ _____

b) $5(p - 2) \equiv$ _____

c) $6(8 + g) \equiv$ _____

d) $3(4e + 3) \equiv$ _____

e) $9(5t - 1) \equiv$ _____

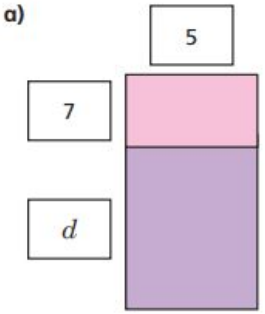
f) $3(a + b) \equiv$ _____

g) $4(2m + k) \equiv$ _____

h) $7(3p - 2q) \equiv$ _____

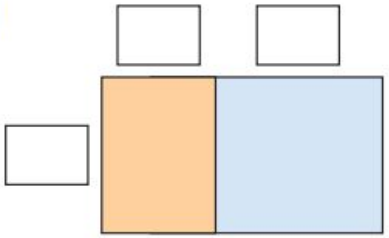
5 Use the rectangles to describe each area in an expanded form.

a)



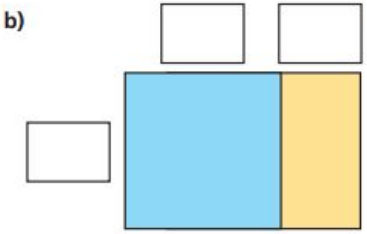
$(7 + d) \times 5 \equiv$ _____

c)



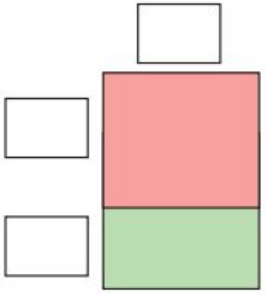
$2k(k + 2t) \equiv$ _____

b)



$n(n + 7) \equiv$ _____

d)



$ak(k + a) \equiv$ _____

6 Eva expands $4(2p - 3)$.

Here is her working out.

$$4(2p - 3) = 8p + 1$$

What mistake has Eva made?

_____

_____

What is the correct answer? _____

7 Fill in the boxes to make the statements correct.

a) $2(\square + 5) \equiv 8j + 10$

b) $\square(4k + 7) \equiv 20k + \square$

c) $9(2m - \square) \equiv \square - 81$

8 Expand the expressions.

a) $-3(f + 7) \equiv$ _____

b) $-4(w - 6) \equiv$ _____

c) $-5(-4 + 2k) \equiv$ _____

d) $-3n(-n - 8) \equiv$ _____

9 Kim is 5 years older than Scott.

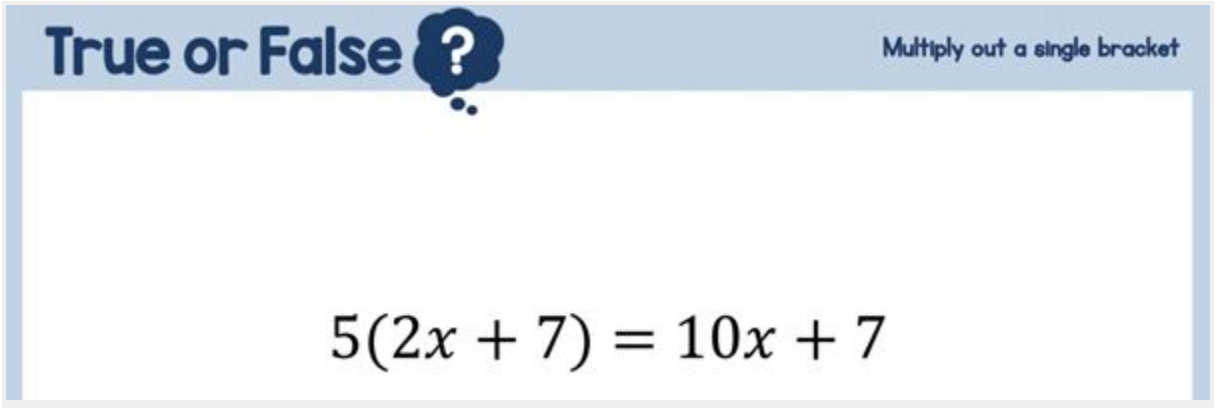
Kim's mum is 3 times Kim's age.

Scott's dad is 3 times Scott's age.

How much older is Kim's mum than Scott's dad?

$\square$ years

Answer the following True/False question- explain your thinking and reasons.



Extension Task:

Annie is working out 6×82 and reasons she can do the same with any number x

$$
\begin{aligned}
&6 \times 82 \\
&= 6 \times (80 + 2) \\
&= 6 \times 80 + 6 \times 2 \\
&= 480 + 12 \\
&= 491
\end{aligned}
$$

$$
\begin{aligned}
&6 \times (a + 2) \\
&= 6 \times a + 6 \times 2 \\
&= 6a + 12
\end{aligned}
$$

Compare the value of $6 \times (a + 2)$ with the value of $6a + 12$ for different values of a (positive, negative, fractions, decimals)

Do they always have the same value?

	Now create a set of your own True or False questions- make a set of cards/ a puzzle/ chatterbox etc **Video link: https://vimeo.com/490424538** **Worksheet link:** **https://resources.whiterosemaths.com/wp-content/uploads/2019/12/Y8-Spring-Block-1-WO3-Multiply-out-a-single-bracket-2019.pdf** **Lesson 2:** **Retrieval Practice- Flashback 4** **Copy and complete each question and write out an explanation of the key word, check that you can say and spell it correctly.**

1) What is the ratio of green to red?

2) Work out $2 \times 2 \times 2 \times 3$

3) A bag contains 3 red and 4 blue counters.
A counter is taken at random.
What is the probability the counter is blue?

4) What is $\frac{3}{5}$ of 20?

Vocabulary check: Commutative

Topic: Factorising into a single bracket.

- **Write a summary of what you know about brackets in your book.**
- **List examples of using brackets in everyday life or other subjects.**

Copy and complete the following:

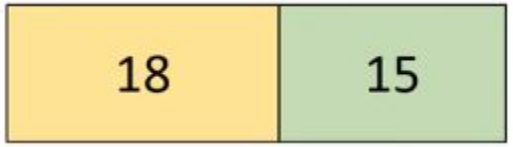
1) List the factors of 18

2) List the factors 15

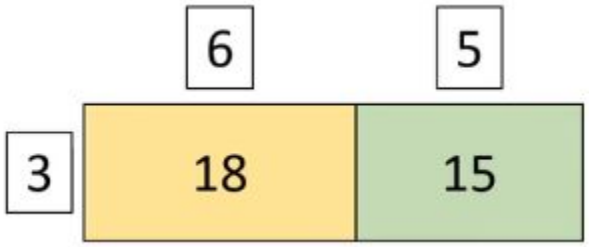
3) List the common factors of 15 and 18

4) Identify the highest common factor of 9 and 12

Read, copy and understand the following:
Example 1:



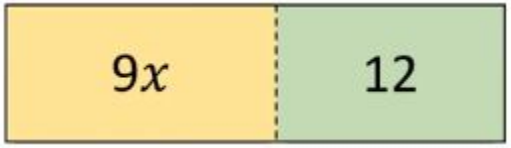
What are the factors of 18 and 15



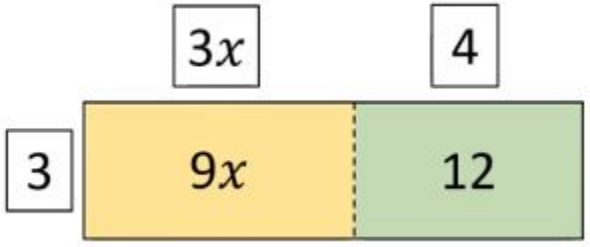
$$18 + 15 = 3 \times 6 + 3 \times 5$$

$$= 3(6 + 5)$$

Example 2:



What are the factors of 9 and 12



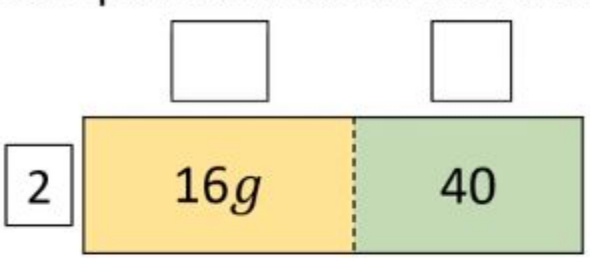
$$9x + 12 \equiv 3 \times 3x + 3 \times 4$$

$$\equiv 3(3x + 4)$$

In each of the examples: explain the method to get to the answer (in your exercise books)

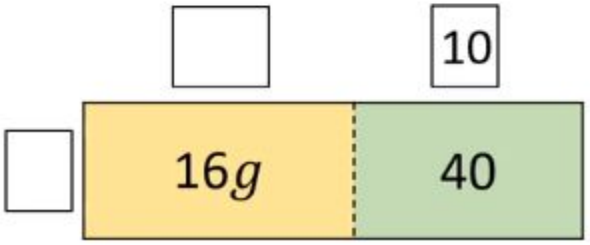
Complete the factorisations. What do you notice?

Have a think



$16g + 40 \equiv 2(\square + \square)$

$16g + 40 \equiv \square(2g + \square)$

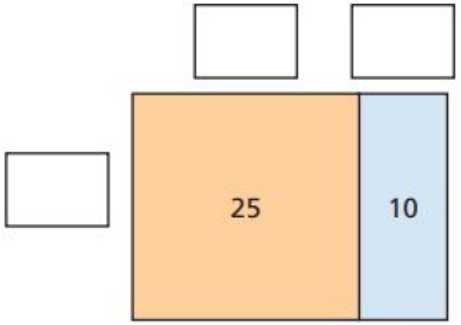


$16g + 40 \equiv \square(\square + 10)$

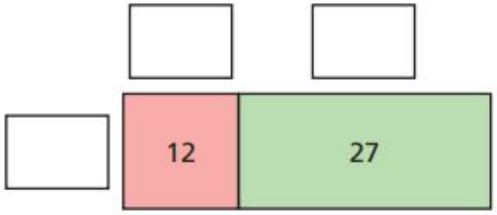
Complete the following questions in your book.

1 Find the missing numbers.

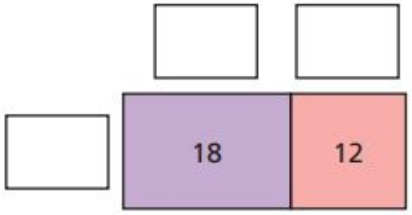
a)



b)



c)



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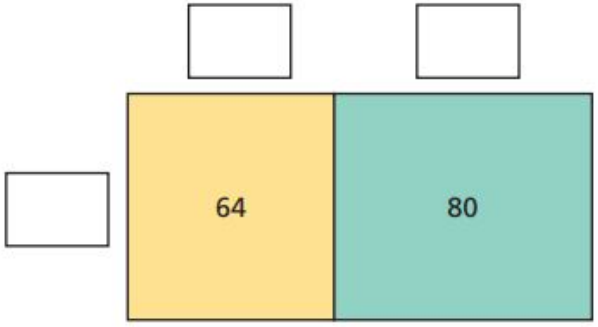
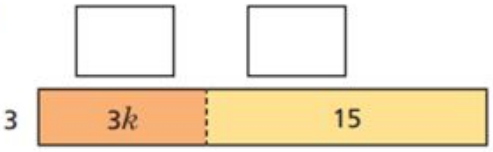


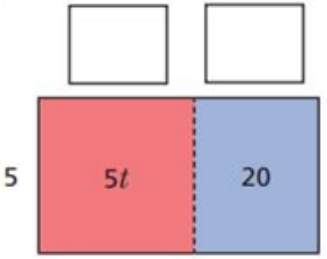
2 Fill in the boxes and complete the factorisations.

a)



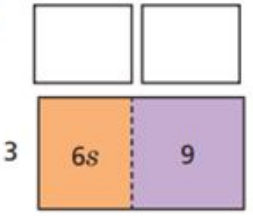
$3k + 15 \equiv 3(\square + \square)$

b)



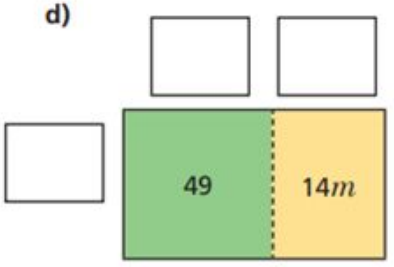
$5t + 20 \equiv \square(\square + \square)$

c)



$6s + 9 \equiv 3(\square + \square)$

d)



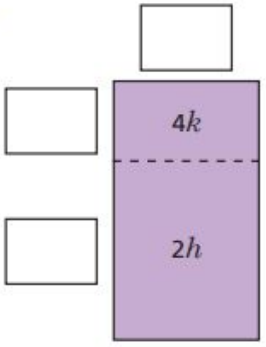
$49 + 14m \equiv \square(\square + \square)$

3 How many ways can you factorise $24k + 16$?

Compare answers with a partner.

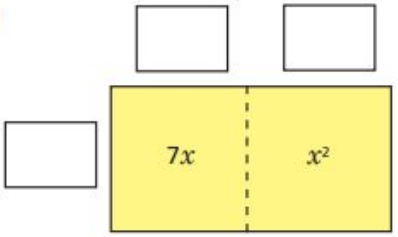
4 Use the rectangles to factorise the expressions.

a)



$4k + 2h \equiv$ _____

b)



$7x + x^2 \equiv$ _____

5 Factorise the expressions fully.

a) $3m + 12 \equiv$ _____

b) $9m + 12 \equiv$ _____

c) $10y - 8 \equiv$ _____

d) $20 + 25x \equiv$ _____

e) $42 - 12y \equiv$ _____

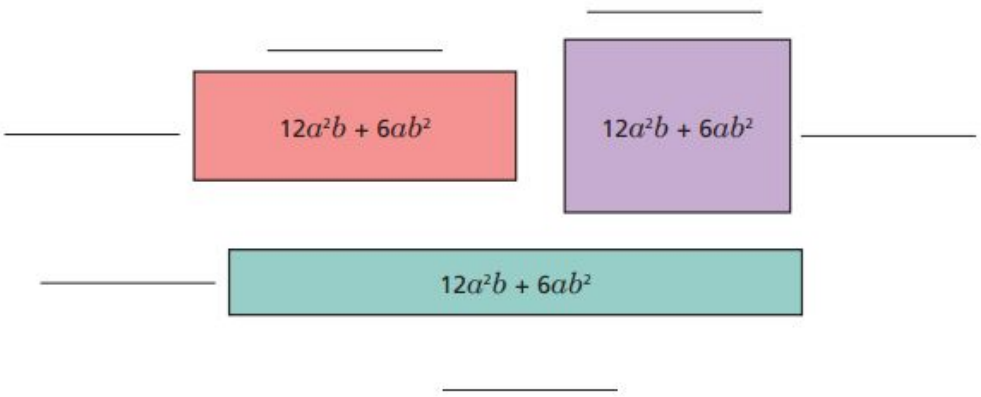
f) $16p + 24n \equiv$ _____

g) $6d - 6 \equiv$ _____

h) $g^2 + 5g \equiv$ _____

6 These rectangles have the same area but different length sides.

Give possible side lengths for each rectangle.



7 **a)** Factorise $t^2 + t \equiv$ _____

b) Use your understanding of factors to explain why there is no integer, t, where

$t^2 + t = 13$

_____

_____

c) If t is an integer, explain why $t^2 + t = 14$ has no solutions.

_____

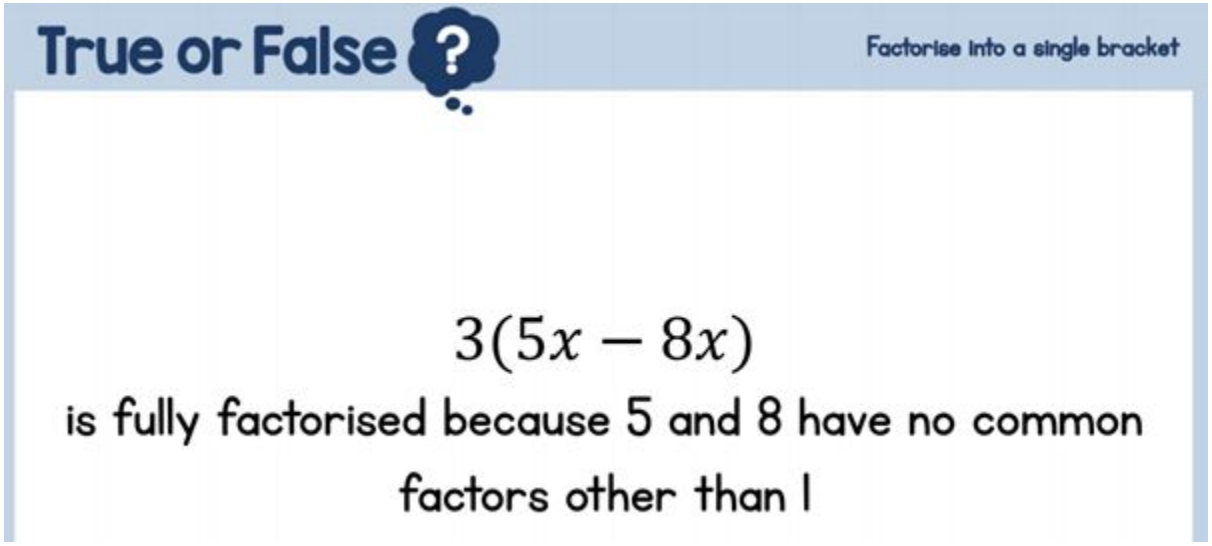
_____

d) If t is an integer, explain why $t^2 + t$ must be an even number.

_____

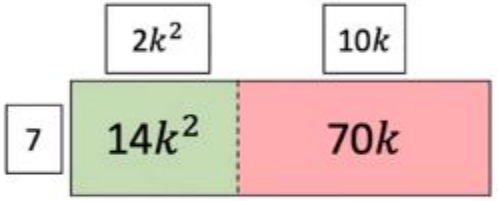
_____

Answer the following True/False question- explain your thinking and reasons.

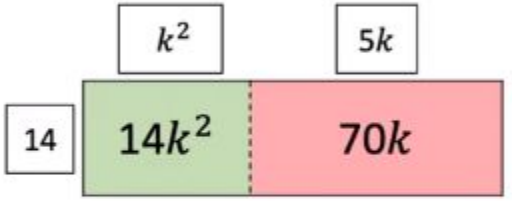


Extension Task 1:

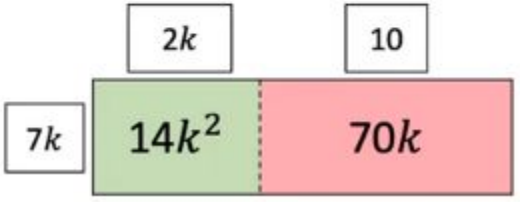
Which solution shows $14k^2 + 70k$ **fully** factorised?



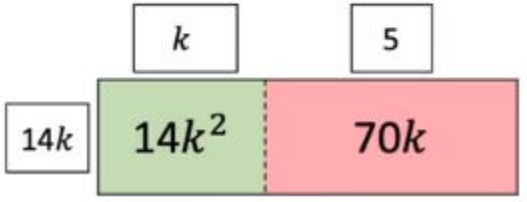
$14k^2 + 70k \equiv 7(2k^2 + 10k)$



$14k^2 + 70k \equiv 14(k^2 + 5k)$



$14k^2 + 70k \equiv 7k(2k + 10)$

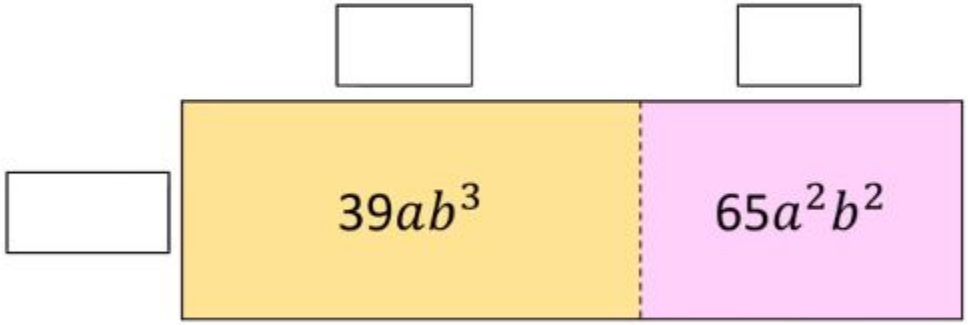


$14k^2 + 70k \equiv 14k(k + 5)$

Extension Task 2:

Factorise fully $39ab^3 + 65a^2b^2$

$\equiv 39 \times a \times b \times b \times b + 65 \times a \times a \times b \times b$



$39ab^3 + 65a^2b^2 \equiv$? (? + ?)

Now create a set of your own True or False questions- make a set of cards/ a puzzle/ chatterbox etc

Video link: https://vimeo.com/490897953
Worksheet link:
https://resources.whiterosemaths.com/wp-content/uploads/2019/11/Y8-Spring-Block-1-WO4-Factorise-into-a-single-bracket-2019.pdf

Lesson 3:

Retrieval Practice- Flashback 4

Copy and complete each question and write out an explanation of the key word, check that you can say and spell it correctly.

1) What is the ratio of red to green?

2) What is the lowest common multiple of 6 and 10?

3) The probability of it raining tomorrow is 65%.
What is the probability that it does not rain tomorrow?

4) Write $\frac{3}{10}$ as a decimal.

Vocabulary check: Quadrilateral

Topic: Expand multiple single brackets and simplify.

- **Write a summary of what you know about brackets in your book.**
- **List examples of using brackets in everyday life or other subjects.**

Copy and complete the following:

1) Expand $3(x + 2)$

2) Expand $3(2x + 3)$

3) Simplify $3h + 4 + 5h$

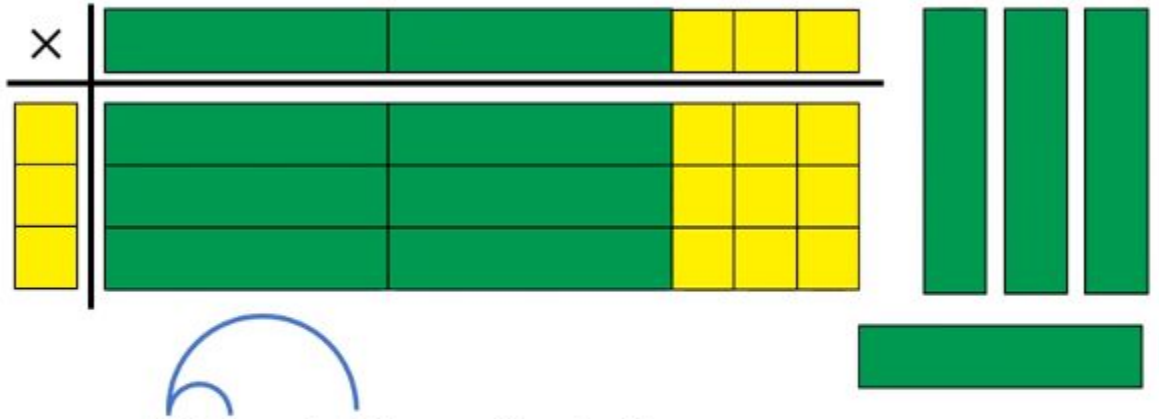
4) Simplify $3h + 4 - 3$

5) Simplify $3h + 4 + 5h - 3$

Read, copy and understand the following:
Example 1:

Expand and simplify $3(2x + 3) + 4x$

Expand and simplify $3(2x + 3) + 4x$



$$3(2x + 3) \equiv 6x + 9$$

$$3(2x + 3) + 4x \equiv (6x + 9) + 4x \equiv 10x + 9$$

Example 2:

Expand and simplify $3(x+2)+3(2x+3)$

$$3(x+2)+3(2x+3) \equiv (3x+6)+(6x+9)$$
$$\equiv 3x+6+6x+9$$
$$\equiv 9x+15$$

Example 3:

Expand and simplify $3(x+2)-3(2x+3)$

$$\begin{aligned} 3(x+2)-3(2x+3) &\equiv (3x+6)-(6x+9) \\ &\equiv 3x+6-6x-9 \\ &\equiv -3x-3 \end{aligned}$$

In each of the examples: explain the method to get to the answer (in your exercise books)

Complete the following questions in your book.

1 Given that $3(2h + 5) \equiv 6h + 15$, simplify the expressions.

a) $3(2h + 5) + 4 \equiv$ _____

b) $3(2h + 5) - 6 \equiv$ _____

c) $3(2h + 5) + 5h \equiv$ _____

d) $6h + 3(2h + 5) \equiv$ _____

2 **a)** Expand $3(h + 5)$

_____

b) Expand $4(h + 6)$

_____

c) Use your answers to part a) and part b) to simplify

$3(h + 5) + 4(h + 6)$

_____

3 **a)** Expand $4(2p + 3q)$

_____

b) Expand $2(p + q)$

_____

c) Use your answers to part a) and part b) to simplify

$4(2p + 3q) + 2(p + q)$

_____

4 Expand and simplify to match up equivalent expressions.

$2(x - 3) + 4(x + 3)$

$2(x - 4) + 4(x + 2)$

$2(2x + 1) + 4(2x + 2)$

$2(2x + 1) + 2(x + 2)$

$3(x - 3) + 3(x + 3)$

$2(4x + 3) + 4(x + 1)$

5 Expand and simplify the expressions.

a) $3(r + 3) + 2r - 5 \equiv$ _____

b) $4(2m - 3) + 4m + 5 \equiv$ _____

c) $7(3p + 4) + 5(2p - 3) \equiv$ _____

d) $7(n - 3) + 4(2n - 5) \equiv$ _____

e) $6(5p + 4) + 3(2 + 9p) \equiv$ _____

f) $2(3x - 5y) + 3(4y - 2x) \equiv$ _____

6 Nijah expands and simplifies the following.

$$5(p + 3) - 2(p + 4) \equiv 5p + 15 - 2p + 8 = 3p + 23$$

What mistake has Nijah made?

_____

_____

What is the correct answer? _____

7 Expand and simplify the expressions.

a) $3(2t + 5) - 2(t + 3) \equiv$ _____

b) $3(2t + 5) - 2(t - 3) \equiv$ _____

8 **a)** Follow Mo's instruction.

Substitute any number into this expression.

$2(x + 6) + 3(x - 4) - 5(x - 2)$

_____

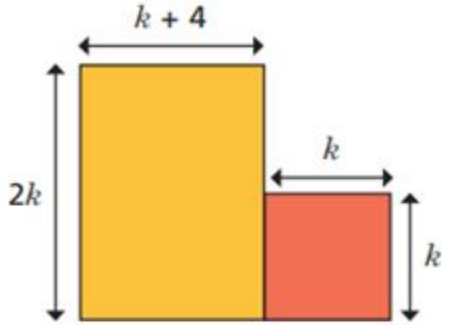
b)

The answer will always be 10

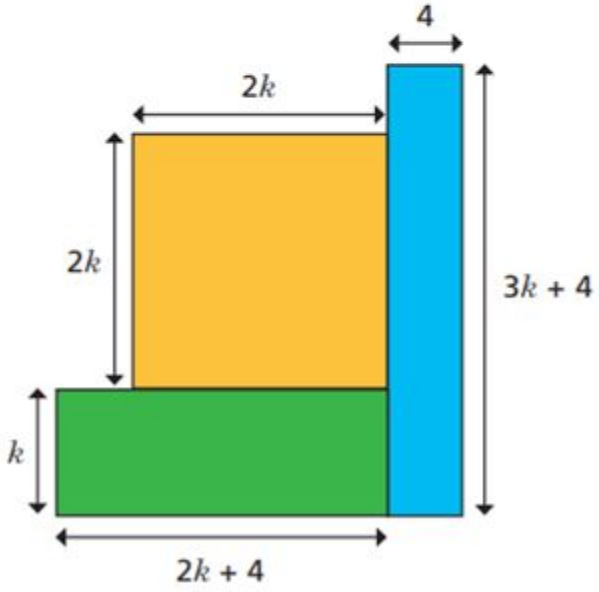
Explain how Mo knows this.

9 Find the areas of the compound shapes.

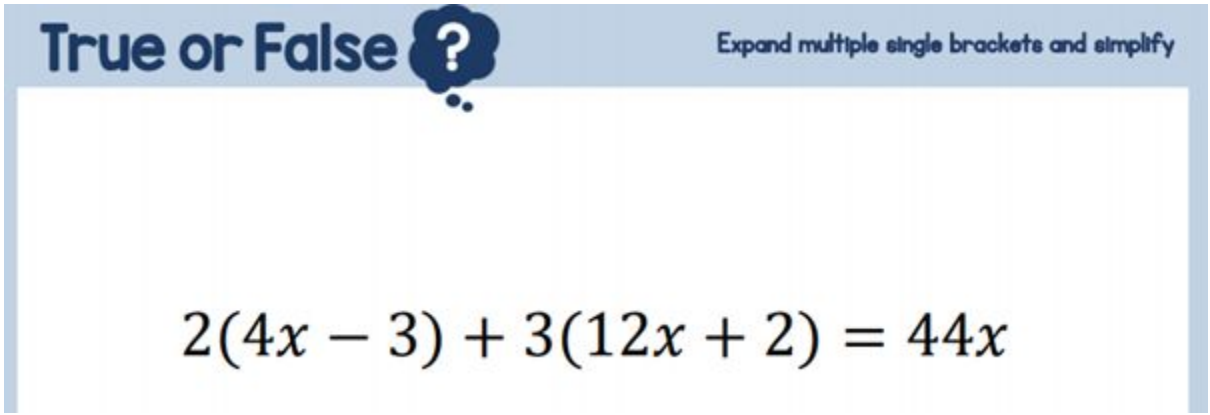
a)



b)



Answer the following True/False question- explain your thinking and reasons.



Extension task

Ron has made mistakes in both these simplifications.

$5+3(a+6)$
$8(a+6)$
$8a+48$ ✗

$5(b-3)+2b$
$5b-15+2b$
$3b-15$ ✗

Explain Ron's errors and work out the correct answers.

Now create a set of your own True or False questions- make a set of cards/ a puzzle/ chatterbox etc

Video link: https://vimeo.com/490661257
Worksheet link:
https://resources.whiterosemaths.com/wp-content/uploads/2019/11/Y8-Spring-Block-1-WO5-Expand-multiple-single-brackets-and-simplify-2019.pdf

Lesson 4:

Retrieval Practice- Flashback 4

Copy and complete each question and write out an explanation of the key word, check that you can say and spell it correctly.

1) A bag contains red and blue counters in the ratio 1 : 4
Three counters are red. How many are blue?

2) Write all the factors of 20

3) Here is a probability scale.
Estimate the probability the arrow points to.

4) What do the angles in a quadrilateral add up to?

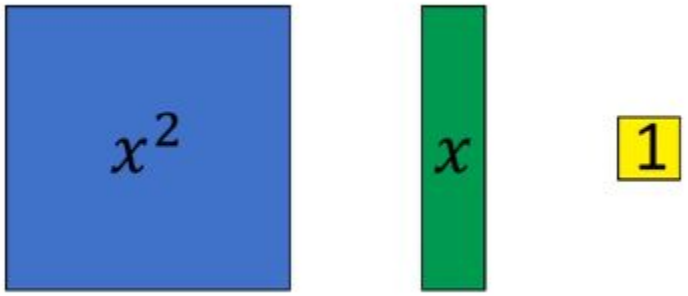
Vocabulary check: Factor

Topic: Expand a pair of binomials.

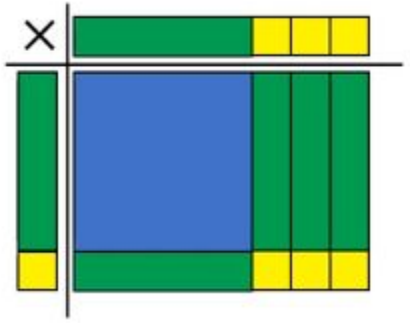
- **Write a summary of what you know about double brackets in your book.**
- **List examples of using double brackets in everyday life or other subjects.**

Copy and complete the following:

	1) Calculate 25×31 2) Find the product of 51 and 63 3) Expand $3x(2x - 5)$ 4) Expand and simplify $4(x + 5) + 2(x - 1)$ **Read, copy and understand the following:** **Example 1:**



$(x+1)(x+3) \equiv$

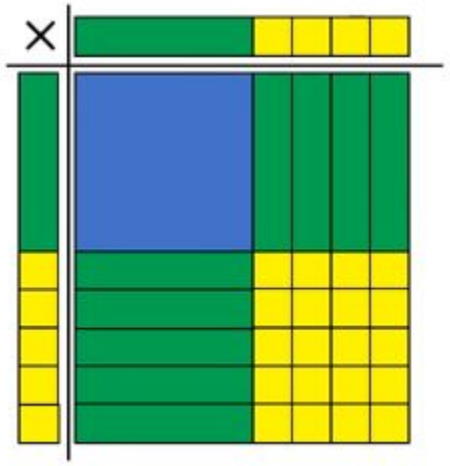


$(x+1)(x+3) \equiv x^2 + x + 3x + 3$

$\equiv x^2 + 4x + 3$

Example 2:

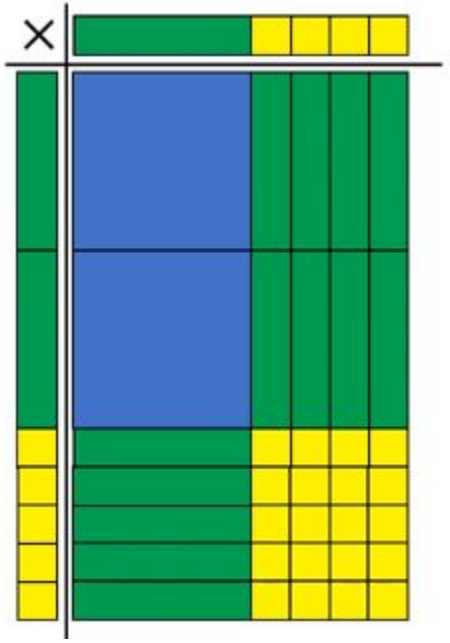
Expand and simplify $(x+5)(x+4)$



$$(x+5)(x+4) \equiv x^2 + 5x + 4x + 20$$
$$\equiv x^2 + 9x + 20$$

Example 3:

Expand and simplify $(2x+5)(x+4)$



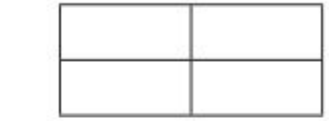
$$(2x+5)(x+4) \equiv 2x^2 + 5x + 8x + 20$$
$$\equiv 2x^2 + 13x + 20$$

In each of the examples: explain the method to get to the answer (in your exercise books)

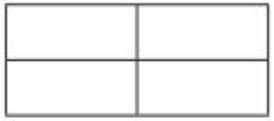
Complete the following questions in your book.

1 Use a grid method of multiplication to work out the calculations.

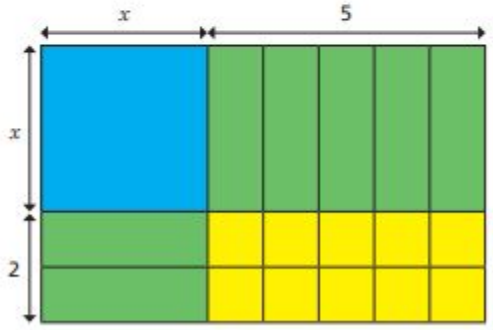
a) 41 × 23



b) 56 × 78



2 Teddy is using algebra tiles to expand $(x + 5)(x + 2)$.



Use the algebra tiles to complete the expansion.

$(x + 5)(x + 2) \equiv$ _____

3 Use algebra tiles to expand and simplify the expressions.

a) $(x + 2)(x + 3) \equiv$ _____

b) $(x + 1)(x + 4) \equiv$ _____

c) $(2x + 3)(x + 1) \equiv$ _____

d) $(2 + x)(x + 3) \equiv$ _____

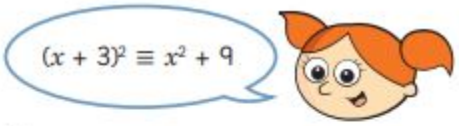
4 Expand and simplify the expressions.

a) $(x + 1)(x + 3) \equiv$ _____

b) $(k + 1)(k + 8) \equiv$ _____

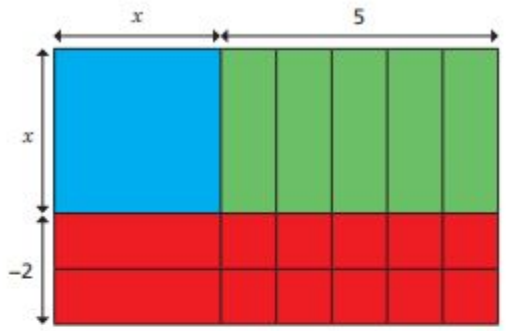
c) $(2b + 4)(b + 6) \equiv$ _____

5



Show that Alex is incorrect.

6 Teddy uses algebra tiles to expand $(x + 5)(x - 2)$.



Use algebra tiles to complete the expansions.

a) $(x + 5)(x - 2) \equiv$ _____

b) $(x - 5)(x + 2) \equiv$ _____

7 Expand and simplify the expressions.

a) $(p + 6)(p - 3) \equiv$ _____

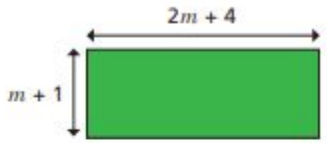
b) $(t - 7)(t + 4) \equiv$ _____

c) $(u - 4)(u - 2) \equiv$ _____

d) $(2x + 5)(x - 2) \equiv$ _____

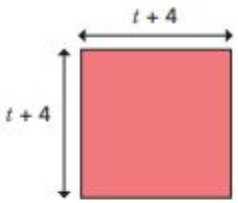
8 Write expressions for the areas of the shapes.

a)



_____

b)



_____

9 Expand each expression.

$(x + 5)(x - 5)$	$(x - 3)(x + 3)$
$(2x + 4)(2x - 4)$	$(5 + a)(5 - a)$

Discuss with a partner what you notice about the answers.

10 Expand and simplify the expressions.

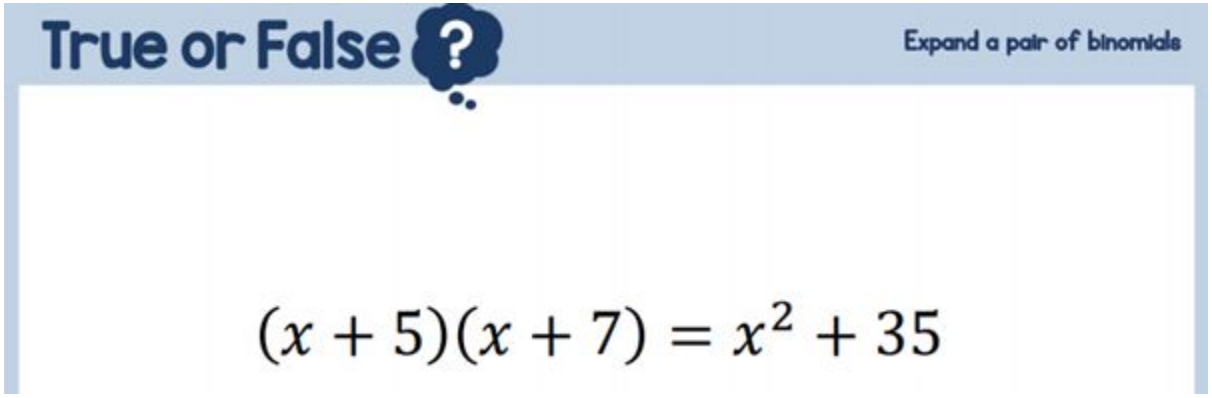
a) $(x + a)(x + a) \equiv$ _____

b) $(x + a)(x + b) \equiv$ _____

c) $(x + a)(x - b) \equiv$ _____

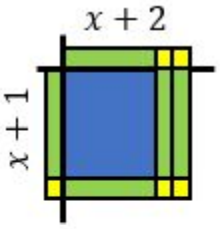
d) $(x + a)(x - a) \equiv$ _____

Answer the following True/False question- explain your thinking and reasons.



Extension task 1:

Explain how the algebra tiles show that
$(x+1)(x+2) \equiv x^2 + 3x + 2$



Use algebra tiles to expand the expressions.

$(x+4)(x+3)$ $(x+3)(x+4)$

$(x+4)(x-3)$ $(x+3)(x-4)$ $(x+3)^2$

Extension task 2:

$$(x+5)(x+4) \equiv x^2+9x+20$$

$$(x+5)(x-4) \equiv x^2+x-20$$

$$(x-5)(x+4) \equiv x^2-x-20$$

$$(x-5)(x-4) \equiv x^2-9x+20$$

What do you notice?

Now create a set of your own True or False questions- make a set of cards/ a puzzle/ chatterbox etc

Video link: https://vimeo.com/491562906

Worksheet link: https://resources.whiterosemaths.com/wp-content/uploads/2019/11/Y8-Spring-Block-1-WO6-Expand-a-pair-of-binomials-H-2019.pdf

Lesson 5:

Retrieval Practice- Flashback 4

Copy and complete each question and write out an explanation of the key word, check that you can say and spell it correctly.

1) A bag contains red and blue counters in the ratio 1 : 3
Fifteen counters are blue. How many are red?

2) Which of the numbers are prime?
1, 6, 7, 15, 35

3) Write a sample space for the outcomes of a fair six-sided dice.

4) Write 30% as a decimal.

Vocabulary check: Product

Topic: Solve equations, including with brackets.

- **Write a summary of what you know about brackets in your book.**
- **List examples of using brackets in everyday life or other subjects.**

Copy and complete the following:

Solve the equations.

1) $x - 11 = 30$

2) $y + 9 = 5$

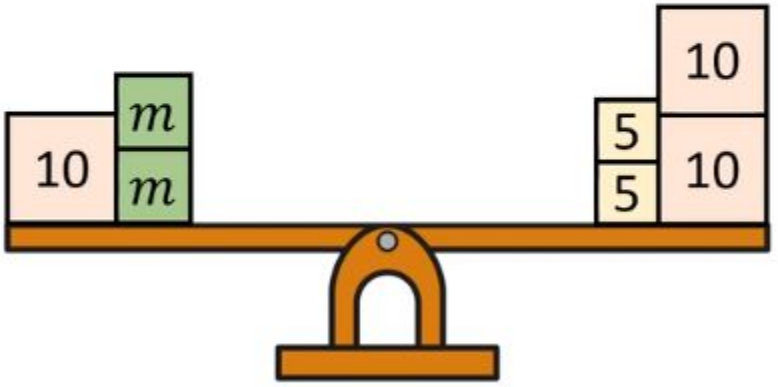
3) $\frac{m}{4} = 20$

4) $8p = 36$

Read, copy and understand the following:

Example 1:

The scales are balanced.
Work out the value of m.



$$
\begin{aligned}
2m + 10 &= 30 \\
-10 \quad & \quad -10 \\
2m &= 20 \\
\div 2 \quad & \quad \div 2 \\
m &= 10
\end{aligned}
$$

Example 2:

Solve $9 - 5y = 31$

$$9 - 5y = 31$$
$$-9 \qquad -9$$
$$-5y = 22$$
$$\div -5 \quad \div -5$$
$$y = -\frac{22}{5}$$
$$y = -4.4$$

Example 3:

$$9 - 5y = 31$$
$$+5y \quad +5y$$
$$9 = 31 + 5y$$
$$-31 \quad -31$$
$$-22 = 5y$$
$$\div 5 \quad \div 5$$
$$-\frac{22}{5} = y$$
$$y = -4.4$$

Example 4:

Solve $4(2a - 3) = 60$

$$4(2a - 3) = 60$$
$$\div 4 \qquad \div 4$$
$$2a - 3 = 15$$
$$+3 \qquad +3$$
$$2a = 18$$
$$\div 2 \qquad \div 2$$
$$a = 9$$

Example 5:

$$4(2a - 3) = 60$$

$$8a - 12 = 60$$
$$+12 \quad +12$$
$$8a = 72$$
$$\div 8 \quad \div 8$$
$$a = 9$$

In each of the examples: explain the method to get to the answer (in your exercise books)

Complete the following questions in your book.