23.02.21 Fluent in five

1) 30% of 140 =
2) 55% of 1032 =
3) 14% of 558 =
4) 2522 ÷ 13 =
5) 4819 x 74 =
6) 14.67 - 4 =

1) 10% of 690 =
2) 70% of 180 =
3) 15% of 150 =
4) 769 x 5 =
5) 8793 ÷ 3 =
6) 12.63 - 9.56 =

WALT understand substitution in algebra

https://vimeo.com/500489180

Substitution, in algebra, means replacing one thing with another such as shapes or letters.

For example

What are the missing values?

 + 7 = 24

 +  = 20

$2a + 4 = 44$

 =10  = 5

 +  +  =

 +  +  +  =

How many different ways can you find to make 30?

It is not always shapes. Sometimes it is letters.

$x = 10$

$x + 4 =$

$3x =$

$\frac{x}{2} =$

$2x + 1 =$

Let's try these together

If $t = 5$ and $g = 6$

$g - t =$ ☐

$3t + 4g + 6g + 7t =$ ☐

$\frac{(4t+5g)}{10} =$ ☐

$4(g - t) =$ ☐

$m = 7 \quad n = 5$

Write >, < or = to compare the expressions.

a) $2m$ ◯ 10

b) $n - 1$ ◯ 5

c) $2n + m$ ◯ $2m + n$

d) $7n$ ◯ $5m$

If $m = \frac{1}{4}$ and $n = 0.2$

work out the value of $m + 3n$

Varied Fluency

If ★ = 7 and ♥ = 5, what is the value of:

★ + ♥ + ♥

If $a = 7$ and $b = 5$ what is the value of:

$$a + b + b$$

What is the same and what is different about this question?

Substitute the following to work out the values of the expressions.

$w = 3 \quad x = 5 \quad y = 2.5$

- $w + 10$
- $w + x$
- $y - w$

Substitute the following to work out the values of the expressions.

$w = 10 \quad x = \frac{1}{4} \quad y = 2.5$

- $3y$
- wx
- $12 + 8.8w$
- $wy + 4x$

Here are two formulae.

$$p = 2a + 5$$

$$c = 10 - p$$

Find the value of c when $a = 10$

$$x = 2c + 6$$

Whitney says,

$x = 12$ because c must be equal to 3 because it's the 3rd letter in the alphabet

Is Whitney correct?

Amir says,

When $c = 5$, $x = 31$

Amir is wrong.
Explain why.
What would the correct value of x be?

If I know... then I know...

6e + 4 = f

When e = 6, f = ☐

When e = 8, f = 52

When e = ☐ f = 58