Tuesday 9th June
Year 5/6: Two Step Equations
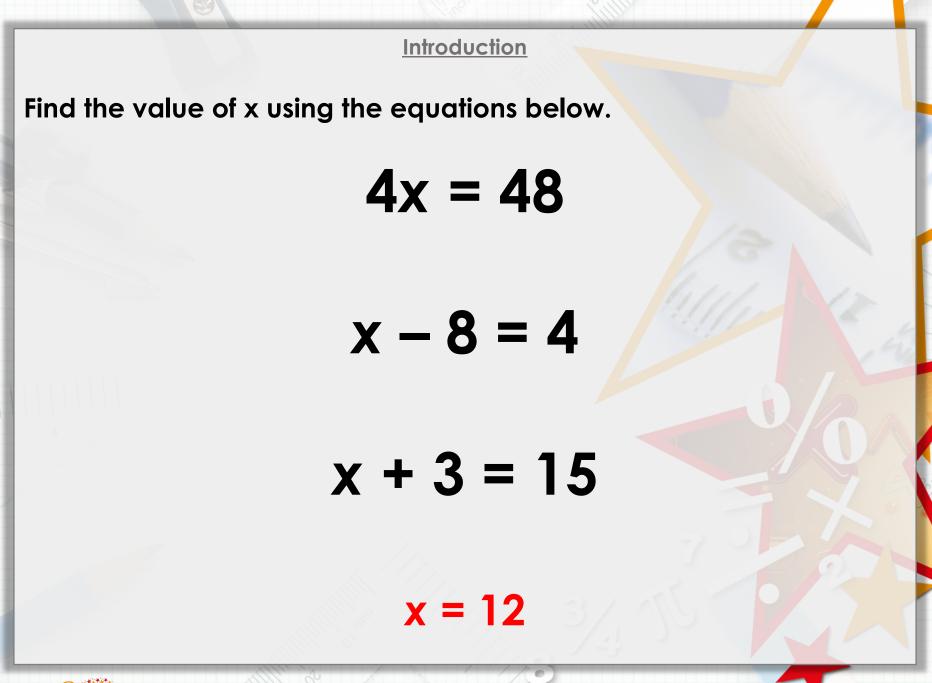
Find the value of x using the equations below.

$$4x = 48$$

$$x - 8 = 4$$

$$x + 3 = 15$$

Find the value of x using the equations below.

$$4x = 48$$

$$x - 8 = 4$$

$$x + 3 = 15$$

$$x = 12$$

Are the following statements true or false?

i. If $x = 4$, then $5x + 1 = 25$

ii. If $y = 3$, then $3y - y = 6$

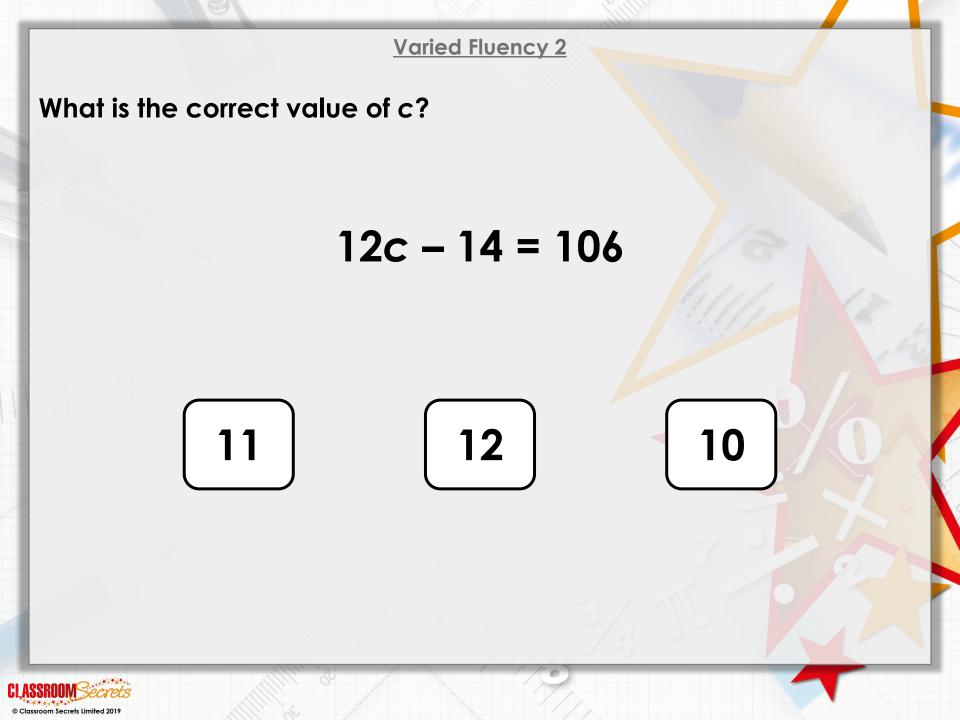## iii. If $z = 10$, then $0.5z + 2 = 7$

Are the following statements true or false?

i. If $x = 4$, then $5x + 1 = 25$ **False, $5x + 1 = 21$**

ii. If $y = 3$, then $3y - y = 6$ **True**

iii. If $z = 10$, then $0.5z + 2 = 7$ **True**

What is the correct value of c?

$$12c - 14 = 106$$

| 11 | 12 | 10 |

What is the correct value of *c*?

$$12c - 14 = 106$$

11   **12**   **10**

Match each equation to the correct value of *a*.

$$5a - 7 = 23 \qquad\qquad a = 4$$

$$\frac{1}{2}a + 10 = 12 \qquad\qquad a = 6$$

$$7 = 6 + 4a \qquad\qquad a = 0.25$$

Match each equation to the correct value of *a*.

$$5a - 7 = 23$$
$$\frac{1}{2}a + 10 = 12$$
$$7 = 6 + 4a$$

$$a = 4$$
$$a = 6$$
$$a = 0.25$$

Fill in the missing operations to show how to solve the equation below.

$$4x \; + \; 3 \; = \; 15$$

A

$$4x \; = \; 12$$

B

$$x \; = \; 3$$

Fill in the missing operations to show how to solve the equation below.

$$4x + 3 = 15$$

⬇ | -3

$$4x = 12$$

⬇ | $\div 4$

$$x = 3$$

Using the cards below and any of the four operations, create three balanced equations where *x* = 10.

4

4

2x

5

3x

6

Using the cards below and any of the four operations, create three balanced equations where $x = 10$.

4	4	2x
5	3x	6

Various possible answers, for example:

$4 \times 5 = 2x$; $2x + 4 = 6 \times 4$; $3x = 5 \times 6$.

Choose a value for c and find three possibilities to complete the following equation.

$$\boxed{} c \quad + \quad \boxed{} \quad = \quad 24$$

Choose a value for *c* and find three possibilities to complete the following equation.

$$\boxed{}c \quad + \quad \boxed{} \quad = \quad 24$$

Various possible answers, for example:

If *c* = 5 then, 2*c* + 14 = 24, 3*c* + 9 = 24 and 4*c* + 4 = 24.

Paul and Vanessa are solving the following algebraic equation.

$$6 + 5x = 21$$

This equation is impossible because 5 isn't a factor of 21.

Paul

x must be 3 for this equation to be balanced.

Vanessa

Who is correct? Prove it.

Paul and Vanessa are solving the following algebraic equation.

$$6 + 5x = 21$$

> This equation is impossible because 5 isn't a factor of 21.

Paul

> x must be 3 for this equation to be balanced.

Vanessa

Who is correct? Prove it.
Vanessa is correct because…

Year 5 and Year 6 Developing

2a. What is the correct value of c?

$$2c - 7 = 13$$

| 15 | 18 | 10 |

6 VF

2b. What is the correct value of c?

$$2c + 12 = 18$$

| 5 | 3 | 7 |

6 VF

3a. Match each equation to the correct value of a.

$$2a - 5 = 7 \qquad a = 8$$

$$a + 4 = 12 \qquad a = 5$$

$$8 = 3 + a \qquad a = 6$$

6 VF

3b. Match each equation to the correct value of a.

$$a - 3 = 6 \qquad a = 3$$

$$a + 6 = 14 \qquad a = 9$$

$$9 = 3 + 2a \qquad a = 8$$

6 VF

4a. Fill in the missing operation to show how to solve the equation below.

$$x \ - \ 6 \ = \ 24$$

⬇ ☐

$$x \ = \ 30$$

4b. Fill in the missing operation to show how to solve the equation below.

$$x \ + \ 5 \ = \ 22$$

⬇ ☐

$$x \ = \ 17$$

2a. Choose a value for c and find three possibilities to complete the following equation.

$$2c - \boxed{} = \boxed{}$$

☆ D   6 PS

2b. Choose a value for c and find three possibilities to complete the following equation.

$$2c + \boxed{} = \boxed{}$$

☆ D   6 PS

3a. Scott and Mia are solving the following algebraic equation.

$$x + 6 = 13 + 2$$

x must be 6 for this equation to be balanced.

Scott

x must be 9 for this equation to be balanced.

Mia

Who is correct? Prove it.

3b. Ben and Freya are solving the following algebraic equation.

$$x + 3 = 8 + 4$$

x must be 9 for this equation to be balanced.

Ben

x must be 5 for this equation to be balanced.

Freya

Who is correct? Prove it.

Year 6 Expected

6a. What is the correct value of c?

$$11c - 16 = 116$$

| 9 | 12 | 14 |

6 VF

6b. What is the correct value of c?

$$10c + 13 = 103$$

| 8 | 9 | 10 |

6 VF

7a. Match each equation to the correct value of a.

$9a \div 3 = 12$ $a = 0.5$

$\frac{1}{4}a + 11 = 14$ $a = 4$

$9 = 5 + 8a$ $a = 12$

6 VF

7b. Match each equation to the correct value of a.

$3a \div 2 = 12$ $a = 10$

$\frac{1}{2}a + 11 = 16$ $a = 0.25$

$8 = 7 + 4a$ $a = 8$

6 VF

8a. Fill in the missing operations to show how to solve the equation below.

$$5x - 7 = 18$$

⬇ A

$$5x = 25$$

⬇ B

$$x = 5$$

8b. Fill in the missing operations to show how to solve the equation below.

$$6x + 4 = 22$$

⬇ A

$$6x = 18$$

⬇ B

$$x = 3$$

5a. Choose a value for c and find three possibilities to complete the following equation.

$$\boxed{}\,c\ \div\ \boxed{}\ =\ 2$$

☆ E   6 PS

5b. Choose a value for c and find three possibilities to complete the following equation.

$$\boxed{}\,c\ -\ \boxed{}\ =\ 12$$

☆ E   6 PS

6a. James and Lily are solving the following algebraic equation.

$$6x - 15 = 21$$

James: This equation is impossible because 6 is smaller than 15.

James

Lily: x must be 6 for this equation to be balanced.

Who is correct? Prove it.   **Lily**

6b. Danny and Bella are solving the following algebraic equation.

$$60 \div 4x = 5$$

Danny: x must be 3 for this equation to be balanced.

Danny

Bella: This equation is impossible because $60 \div 4 = 15$.

Who is correct? Prove it.   **Bella**

Year 6 Greater Depth

10a. What is the correct value of c?

$$\frac{1}{5}c + 48 = 60$$

| 12 | 30 | 60 |

6 VF

10b. What is the correct value of c?

$$\frac{1}{10}c + 91 = 100$$

| 10 | 80 | 90 |

6 VF

11a. Match each equation to the correct value of a.

$18a + 24 = 30$ $\qquad a = 4$

$9a + 17 = 21.5$ $\qquad a = \frac{1}{3}$

$-5 = 6a - 29$ $\qquad a = 0.5$

6 VF

11b. Match each equation to the correct value of a.

$20a + 36 = 41$ $\qquad a = 0.5$

$7a + 34 = 37.5$ $\qquad a = 5$

$-4 = 6a - 34$ $\qquad a = \frac{1}{4}$

6 VF

12a. Fill in the missing operations to show how to solve the equation below.

$$28x + 6.3 = 10.3$$

⬇ A

$$28x = 4$$

⬇ B

$$x = \frac{1}{7}$$

12b. Fill in the missing operations to show how to solve the equation below.

$$45x + 9.6 = 14.6$$

⬇ A

$$45x = 5$$

⬇ B

$$x = \frac{1}{9}$$

8a. Choose a value for c and find three possibilities to complete the following equations.

$$\boxed{}c \div \boxed{} = 3$$

$$\boxed{}c - \boxed{} = \text{-}2$$

6 PS

8b. Choose a value for c and find three possibilities to complete the following equations.

$$\boxed{}c \div \boxed{} = 4$$

$$\boxed{}c - \boxed{} = \text{-}1$$

6 PS

9a. Alex and Priya are solving the following algebraic equation.

$$21x - 11.5 = \text{-}1$$

Alex: This equation is impossible as the answer is a whole number.

Priya: x must be 0.5 for this equation to be balanced.

Who is correct? Prove it.

9b. Oscar and Kelly are solving the following algebraic equation.

$$24x - 20.4 = \text{-}2.4$$

Oscar: x must be 0.75 for this equation to be balanced.

Kelly: This equation is incorrect as the answer is a negative number.

Who is correct? Prove it.