Understand the meaning of equality

1 Which calculations are correct? Tick your answers.

7 + 2 = 9 ☑   10 = 3 + 8 ☐

13 − 6 = 7 ☑   6 = 25 − 19 ☑

36 = 5 × 7 ☐   56 ÷ 7 = 6 ☐

2 Which calculations are correct? Tick your answers.

9 + 8 = 6 + 12 ☐   17 + 4 = 3 × 7 ☑

6 x 3 = 5 × 4 ☐   55 ÷ 11 = 2 + 3 ☑

7 x 9 = 70 − 7 ☑   76 − 19 = 49 + 9 ☐

19 + 87 = 87 − 1 + 20 ☑   109 + 30 − 1 = 110 + 29 ☐
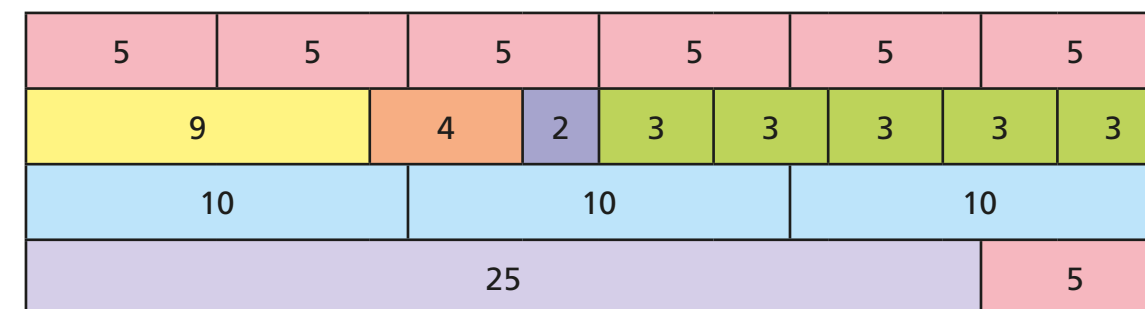
423 − 99 = 423 + 1 − 100 ☑   23 × 99 = 2,300 − 23 ☑

7,878 − 78 = 99 × 78 ☐   6,823 × 999 = 6,823,000 − 6,823 ☑

3 Complete the bar model to show that 50 + 30 = 80

80	
50	30

4 Here is a number wall.

5	5	5	5	5	5

9	4	2	3	3	3	3	3

10	10	10

25	5
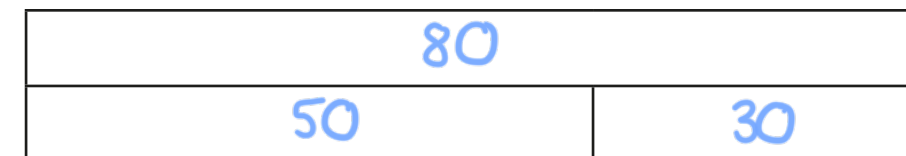
How many equations can you write using this number wall?

Two have been done for you.

$$6 \times 5 = 3 \times 10 \text{ and } 3 \times 5 = 9 + 4 + 2$$

E.g   3 × 5 = 9 + 4 + 2

3 × 10 = 25 + 5

5 Complete the equations.

a) 9 + 6 = 5 + ⟦10⟧   f) 20 ÷ ⟦4⟧ = 60 ÷ 12

b) 30 − 7 = ⟦4⟧ + 19   g) 0.9 + 2 = 3 − ⟦0·1⟧

c) ⟦59⟧ + 7 = 11 × 6   h) ⟦1⟧ − 0.4 = 1.3 − 0.7

d) 6 × ⟦2⟧ = 48 ÷ 4   i) 8 ÷ 0.4 = ⟦80⟧ ÷ 4

e) ⟦9⟧ ÷ 3 = 18 ÷ 6

6 Write integers in the boxes to make the calculations correct.

E.g.

a) $6 + 5 = \boxed{7} + \boxed{4}$

b) $\boxed{6} \times \boxed{8} = 55 - 7$

c) $8 \times 7 = \boxed{64} - \boxed{8}$

How many different answers can you find?

7 Jack is finding the missing number in the equation.

$4{,}891 + 325 = 326 + \boxed{}$

> 326 is 1 more than 325 so to maintain equality the missing number must be 1 less than 4,891

Is Jack correct? __Yes__

Explain your answer.

$4{,}891 + 325 = 4{,}891 + 325 + 1 - 1 = 4{,}891 - 1 + 325 + 1$

$= 4{,}890 + 326$

8 Use Jack's method to find the missing numbers in the equations.

a) $7{,}823 + \boxed{339} = 342 + 7{,}820$

b) $\boxed{792} + 29{,}403 = 785 + 29{,}410$

Does the same method work when subtraction is involved?

Investigate by finding the missing numbers in the equations.

c) $2{,}372 - 749 = \boxed{2{,}373} - 750$

d) $385 - \boxed{237} = 390 - 242$

9 Find the missing numbers. Explain your method.

a) $20 \div 4 = 200 \div \boxed{40}$

$\dfrac{20 \xrightarrow{\times 10} 200}{4 \xrightarrow{\times 10} 40} =$

b) $70 \times 5 = \boxed{700} \div 2$

$70 \times 5 = (70 \times 10) \div 2$

c) $4{,}800 \div 12 = 4.8 \div \boxed{0.012}$

$\dfrac{4{,}800 \xrightarrow{\div 1000} 4.8}{12 \xrightarrow{\div 1000} 0.012} =$