

Use order of operations with directed numbers

1 Tom works out $2 + 5 \times 4$ and says the answer is 28

a) What mistake has Tom made?

b) What is the correct answer?

2 Work out the calculations without a calculator.

a) $8 \div 4 + 3 =$

f) $30 + 6 \times 11 - 11 =$

b) $5 + (10 \div 2) =$

g) $12 + (19 + 2) \div 3 =$

c) $5 + 10 \div 2 =$

h) $30 \div 10 + 3 \times 2 =$

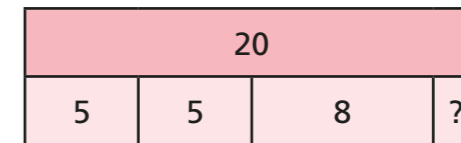
d) $8 \div 2 + 5 \times 5 =$

i) $20 \div 2^2 + (19 - 12) =$

e) $5 + 3 \times 15 + 2 =$

j) $(5^2 + 45) \div 5 \times 8 =$

3 a) Circle the calculation that does **not** find the unknown number in the bar model.



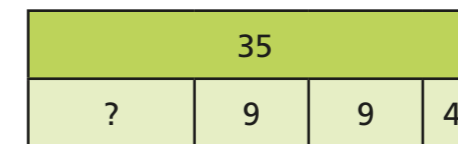
$20 - 8 - 2 \times 5$

$20 - (5 \times 2 + 8)$

$20 - 2 \times 5 + 8$

$20 - 2 \times 5 - 8$

b) Write four different number sentences that find the unknown in this bar model.



4 Dani is answering this question.

$11 - 12 \div -3$

Here is her working out.

$12 \div -3 = -4$
 $11 - 4 = 7$

Explain the mistake that Dani has made.

What is the correct answer?

What could Dani use in the future so that she doesn't make the same mistake again?

5 Complete the calculations.

a) $35 + 8 \div -2 =$

f) $\frac{35 + 8}{-2} =$

b) $-2 - 7^2 =$

g) $-(2 - 7)^2 =$

c) $(-8)^2 - 5 \times 3 - 17 =$

h) $-8^2 - 5 \times 3 - 17 =$

d) $-6 \div -2 + -1 \times 9 =$

i) $-6 \div (-2 + -1) \times 9 =$

e) $11 - 2 \times -7 + 4 =$

j) $11 - 2(-7 + 4) =$

6 Fill in the missing numbers.

a) $6 +$ $\times 2 = 20$

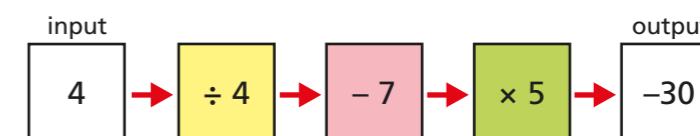
c) $42 =$ $^2 + 13 \times 2$

b) $-2 \times 5 -$ $\div 4 = -12$

d) $-3 = 17 -$ $\times 3 +$

Can you find more than one solution for any of the calculations?

7



Tick the correct number sentence for the function machine.

$4 \div 4 - 7 \times 5 = -30$

$(4 \div 4) - (7 \times 5) = -30$

$4 \div (4 - 7) \times 5 = -30$

$(4 \div 4 - 7) \times 5 = -30$

8

Evaluate these expressions when $a = -4$, $b = 6$, $c = 3$ and $d = -8$

a) $d + 2(c - a)$

b) $c + ad$

9

Insert brackets into the calculations to make the answers correct.

a) $5 - 20 + 2 \div 11 = 3$

b) $21 = 5 + 4 \times 15 - 11$

10

Use these numbers, operations and brackets to make each of the numbers.

You can use each one once only per part. You do not need to use them all.

2 3 4 5 + - × ÷ ()

a) 13 _____

c) -9 _____

b) -1 _____

d) 0 _____

Can you find more than one answer for each number?