

# 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?

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

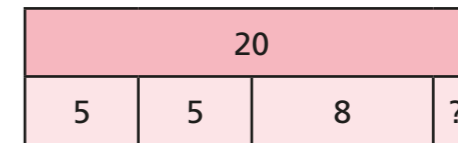
d)  $8 \div 2 + 5 \times 5 =$

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.



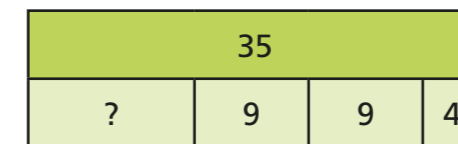
$20 - 8 - 2 \times 5$

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

$20 - 2 \times 5 + 8$

$20 - 2 \times 5 - 8$

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




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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.

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

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

b)  $-2 - 7^2 = \square$

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

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

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

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

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

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

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

6 Fill in the missing numbers.

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

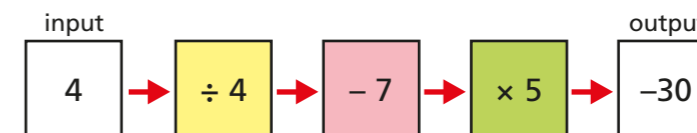
c)  $42 = (\square)^2 + 13 \times 2$

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

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

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?