

Add directed numbers



1 $-1 = -1$ and $1 = 1$

What is the total value of each set of counters?

a) -1 1

0

b) -1 1 -1 -1 1 -1 1

-1

c) 1 -1 1 -1 1 -1 1

1

d) -1 -1 -1 -1 -1 -1 -1
 1 1 1 1 1 1 1

0

e) 1 -1 -1 1 -1 -1 1 -1 1
 1 -1 1 -1 -1 1 -1 1
 1 1 -1 -1 1 -1

-2

2 Complete the calculations using counters.

a) 1 1 1
 -1 -1 -1 -1 -1

$$3 + -5 = \boxed{-2}$$

b) 1 1 1 1 1
 -1 -1 -1

$$\boxed{5} + -3 = \boxed{2}$$

c) 1 1
 -1 -1 -1 -1 -1 -1 -1

$$2 + \boxed{-7} = \boxed{-5}$$

d) 1 1 1 1 1
 -1 -1

$$-2 + \boxed{5} = \boxed{3}$$

3 Complete the calculations.

Use counters to help you.

a) $2 + -7 = \boxed{-5}$

c) $-2 + 7 = \boxed{5}$

b) $-8 + 3 = \boxed{-5}$

d) $-4 + -3 = \boxed{-7}$

4 Use the counters to help you work out $-2 + -6$

$$\begin{matrix} -1 & -1 & + & -1 & -1 & -1 & -1 & -1 & -1 & -1 \\ \hline & & & & & & & & & \end{matrix} = \boxed{-8}$$



5 Complete the calculations.

a) $8 + -3 = \boxed{5}$

$-8 + -3 = \boxed{-11}$

$3 + -8 = \boxed{-5}$

$-3 + -8 = \boxed{-11}$

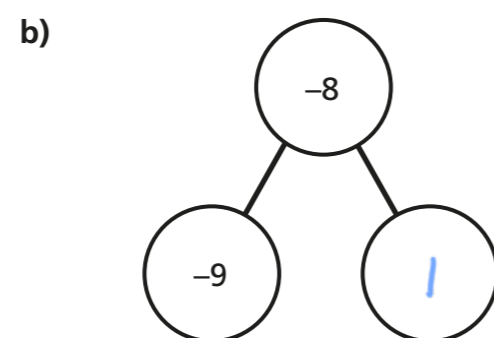
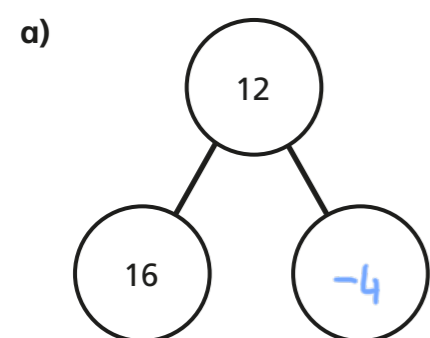
b) $6 = 7 + \boxed{-1}$

$-6 = 7 + \boxed{-13}$

$6 = -7 + \boxed{13}$

$-6 = -7 + \boxed{1}$

6 Complete the part-whole models.



7 Work out the missing numbers in these statements.

a) $4 + -9 = 2 + \boxed{-7}$

c) $9 + -4 = -7 + \boxed{12}$

b) $\boxed{-12} - 1 = -4 + -9$

d) $-7 + \boxed{-6} = -9 + -4$

8 a) Complete the calculation.

$372 + -408 = \boxed{-36}$

Show your workings.

Compare your method with a partner's.

b) Work out the calculations.

$20 + -35 = \boxed{-15}$

$-10 + -32 = \boxed{-42}$

$\boxed{-5} = 25 + -30$

$291 + -527 = \boxed{-236}$

$-291 + -527 = \boxed{-818}$

9 In a quiz, you receive 7 points for a correct answer and -4 points for an incorrect answer.

You receive 0 points if you do not answer the question.

There are 20 questions in total.

Is it possible to get a score of -11 in this quiz? Yes

Explain your answer.

3 correct answers, 8 incorrect answers and 9 unanswered

$21 + -32 + 0 = -11$

10 Simplify the expressions by collecting like terms.

a) $6m + -10m \equiv \boxed{-4m}$

b) $-6m + -10m \equiv \boxed{-16m}$

c) $-6m + 10m \equiv \boxed{4m}$

d) $-6m + -10m + 12m \equiv \boxed{-4m}$

e) $6m + -10m + -17m \equiv \boxed{-21m}$

f) $-6m + 10m + -24m \equiv \boxed{-20m}$