Understand and use representations of directed numbers

1 🔴 = –1 and 🟡 = 1

What is the total value of each set of counters?

a) 🟡 🟡 = 2

🔴 🔴 = -2

b) 🟡 🟡 🟡 🟡 = 4

🔴 🔴 🔴 🔴 = -4

c) 🟡 🟡 🟡 🟡 🟡 🟡 🟡 = 7

🔴 🔴 🔴 🔴 🔴 🔴 🔴 = -7

d) 🟡 🟡 🟡 🟡 🟡 🟡 🟡 🟡 🟡 🟡 🟡 = 11

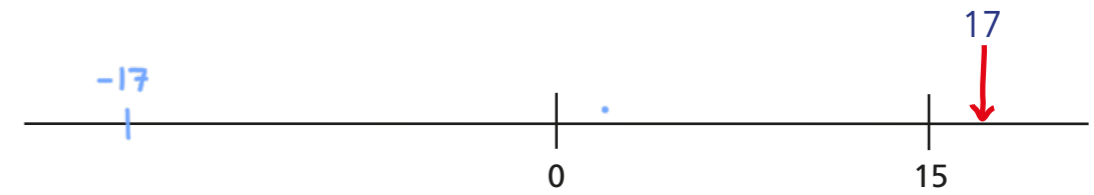🔴 🔴 🔴 🔴 🔴 🔴 🔴 🔴 🔴 🔴 🔴 = -11

2 Circle the number that is closest to zero.

       2   –3   (–1)   4

Explain your answer.

It is only one away from zero.

3 Here is a number line.
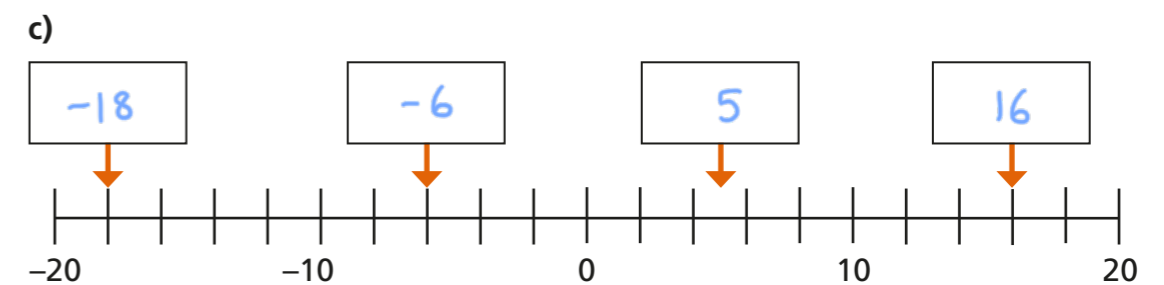
Mo has marked the number 17
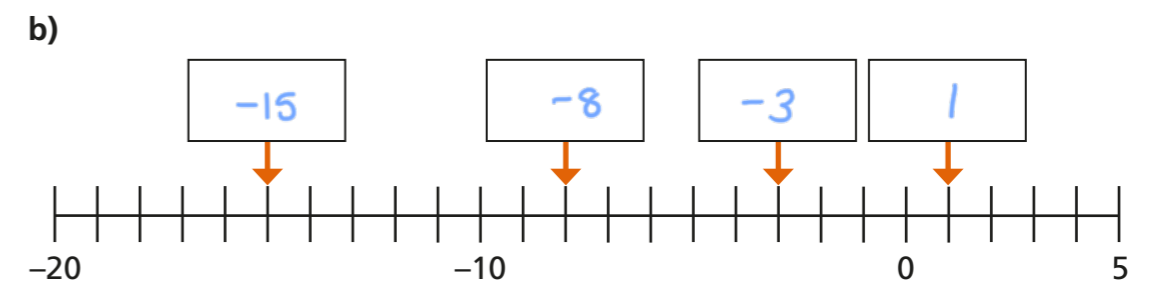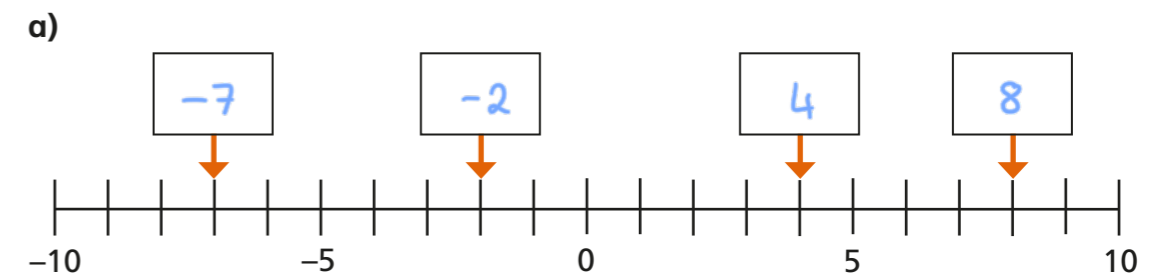
(number line showing –17, 0, 15, 17)
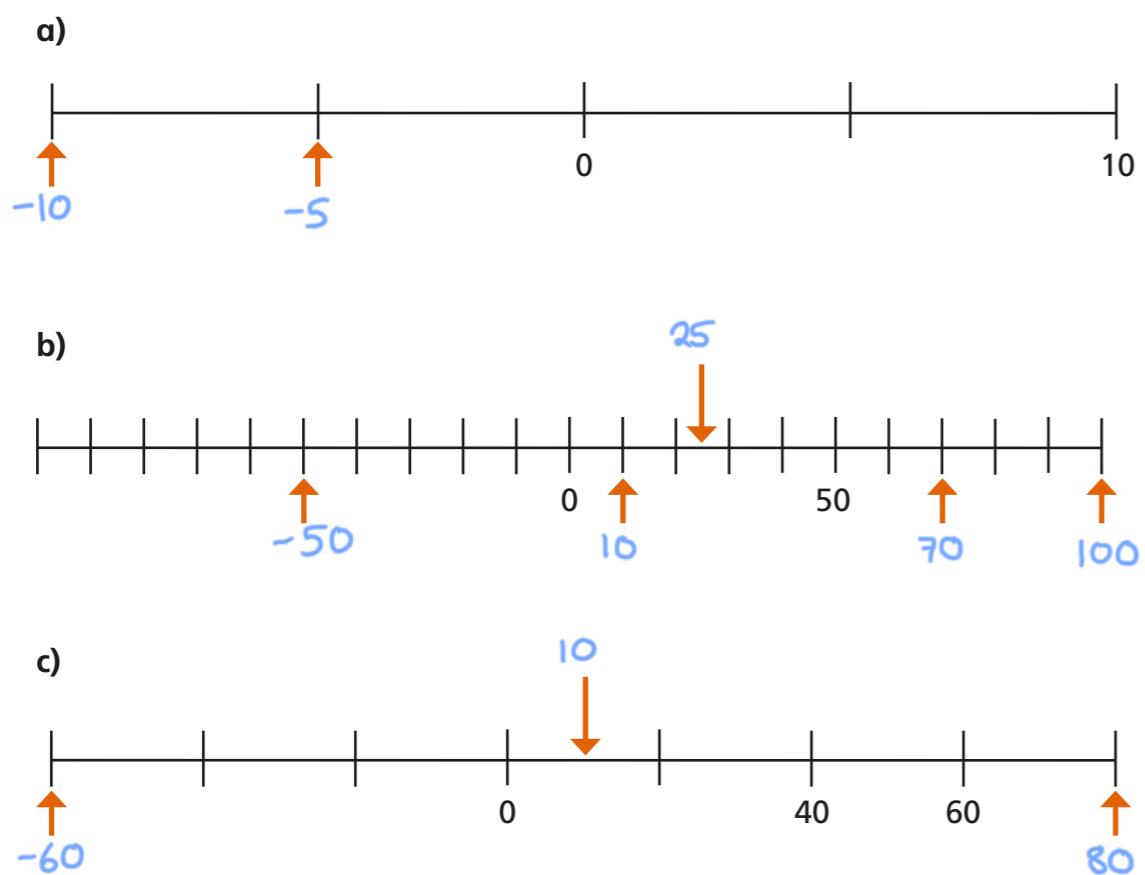
a) Mark the number –17 on the number line.

b) How do you know where –17 is?

It is the same distance from zero as 17 but the opposite direction.

4 Write the missing numbers.

a) _(number line from –10 to 10 with markers –7, –2, 4, 8)_

b) _(number line from –20 to 5 with markers –15, –8, –3, 1)_

c) _(number line from –20 to 20 with markers –18, –6, 5, 16)_

5 What numbers are the arrows pointing to?

Label them on the number lines.

a)

−10   −5   0   10

b)

25

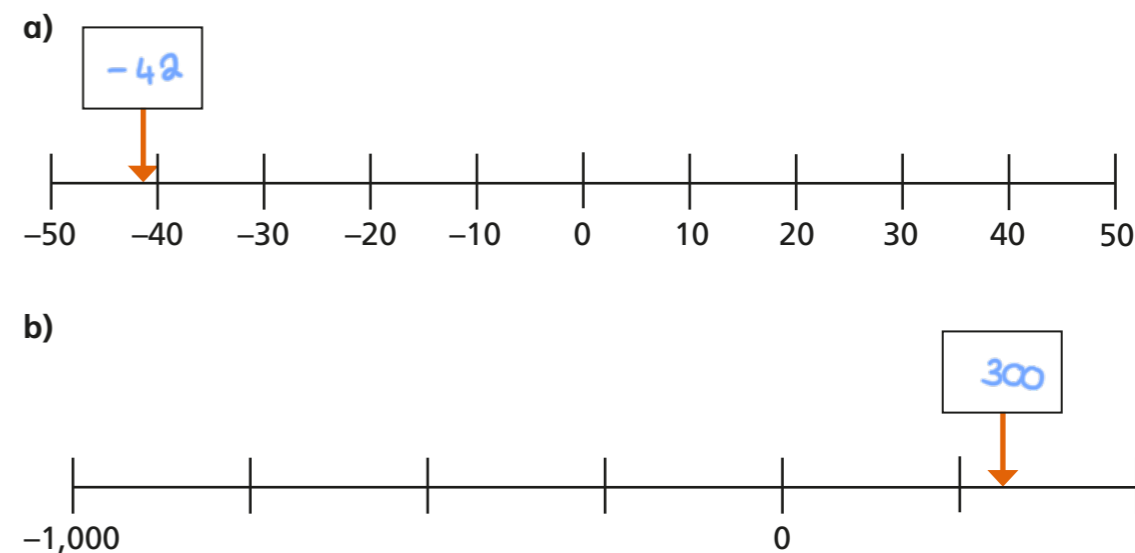−50   0   10   50   70   100

c)

10

−60   0   40   60   80

Discuss with a partner how you worked out the numbers.

6 What is each number line going up in?

Give your answer as a fraction.

a)

−4   0   4

$\frac{1}{2}$

b)

−1   0   1

$\frac{1}{5}$

c)

−1   0   1

$\frac{1}{7}$
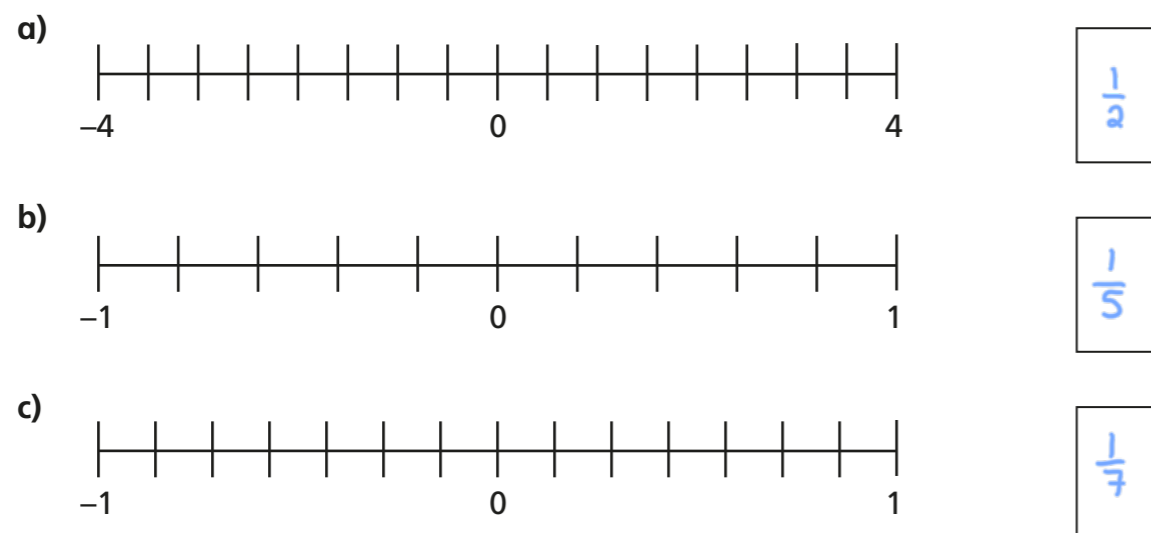
7 Estimate the number the arrow is pointing to on the number line.

a)

−42

−50 −40 −30 −20 −10 0 10 20 30 40 50

b)

300

−1,000   0

8 What temperatures are shown on the thermometers?

a)

−15 °F

b)

45 °F
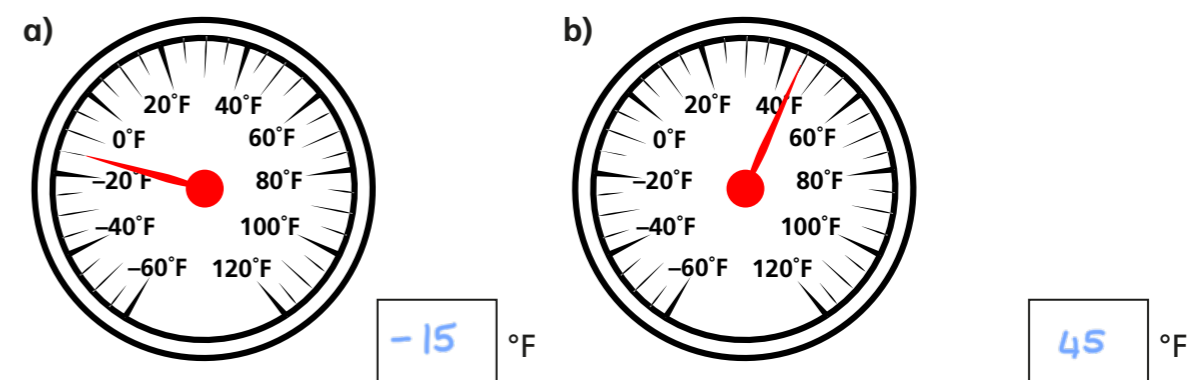
Compare answers with a partner. Did you get the same?

9 Complete these linear sequences.

a) −10, −5 , 0, 5, 10

b) −11 , −9 , −7, −5 , −3 , −1, [ ] , 3, 5

c) 16, 12 , 8 , 4, 0 , −4 , −8, −12

d) −1 , −0.8, −0.6 , −0.4, −0.2 , 0 , 0.2