

Subtracting Integers

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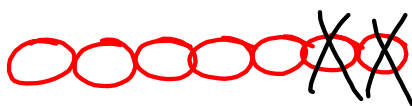
Example 1: Subtract Using Integer Chips

Model each expression using integer chips. Then, subtract.

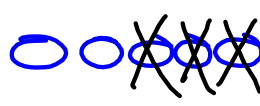
a) $7 - 2$

b) $-5 - (-3)$

c) $2 - 7$

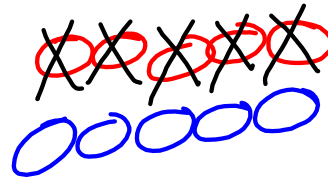


$$= +5$$



$$= -2$$

If there are not enough chips, add or some zero pairs



$$= -5$$

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Example 2: Subtract by Adding the Opposite

a) $3 - (-2)$
 b) $-4 - (-2)$
 c) $-3 - 5$
 d) $2 - 7$

Eg Subtract $-2 \rightarrow$ Add $+2$
 Subtract $+3 \rightarrow$ Add -3

a) $\circ\circ\circ + \circ\circ = +5$
 b) $\circ\circ\cancel{\circ\circ} + \cancel{\circ\circ} = -2$
 c) $\circ\circ\circ + \circ\circ\circ\circ\circ = -8$
 d) $\cancel{\circ\circ} + \cancel{\circ\circ}\circ\circ\circ\circ\circ = -5$

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Example 3: Find Temperature Differences

The overnight low temperatures for four cities are given.

Location	Low Temperature (°C)
Leamington, Ontario	5
Winnipeg, Manitoba	-14
Gander, Newfoundland & Labrador	-2
Québec City, Québec	-9

Find the temperature change from the first city to the second city in each pair.

a) Québec City to Gander b) Québec City to Winnipeg
 c) Leamington to Gander

a) Gander - Québec City
 $= -2 - (-9)$
 $\cancel{\circ\circ} + \cancel{\circ\circ}\circ\circ\circ\circ\circ = +7$

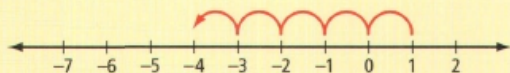
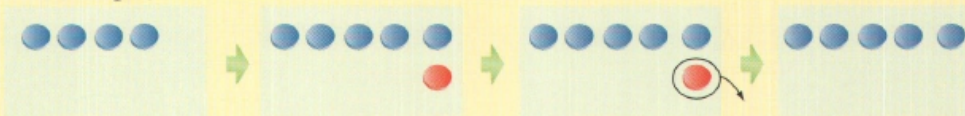
b) Winnipeg - Québec City
 $= -14 - (-9)$
 $\cancel{\circ\circ\circ\circ\circ\circ\circ\circ} + \cancel{\circ\circ\circ\circ\circ\circ} = -5$

c) Gander - Leamington
 $= -2 - (+5)$
 $\circ\circ + \circ\circ\circ\circ\circ = -7$

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Key Ideas

- Subtraction of integers can be modelled using integer chips or a number line.
For example, $-4 - 1 = -5$.



On a number line, the difference is the distance and direction from the second integer to the first.

- Subtraction of integers can be done by adding the opposite integer.

For example, $-4 - 1$
 $= -4 + (-1)$
 $= -5$

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