

Dividing Integers

Study the example problem showing how to divide positive and negative integers. Then solve problems 1–7.

Example

Chen is labeling a thermometer that is used to measure very cold temperatures from 0°F to -40°F . He divides it into 8 equal sections. How many degrees does each section represent?

Think: I need to divide -40 by 8,
so I can ask $8 \cdot ? = -40$.

$$8 \cdot (-5) = -40.$$

This means that $-40 \div 8 = -5$.

- 1** Draw Chen's thermometer. Be sure to label each section.

- 2** Chen labels another thermometer that uses 10 different sections. Complete the table for this thermometer.

Total number of degrees ($^{\circ}\text{F}$)	\div	Number of sections	=	Degrees in each section ($^{\circ}\text{F}$)
-40			=	

- 3** A scuba diver descends 48 feet in 4 minutes. What is the diver's average change in position per minute relative to where she started?
- _____



Solve.

- 4 Multiplication and division are related operations. Look at these examples.

$2 \cdot 4 = 8$	$(-2) \cdot (-4) = 8$	$-2 \cdot 4 = -8$	$2 \cdot (-4) = -8$
$8 \div 4 = 2$	$8 \div (-4) = -2$	$-8 \div 4 = -2$	$-8 \div (-4) = 2$

Think about the signs of the factors and the sign of the product in the multiplication problems. How do the signs of the numbers you are dividing relate to their quotients?

- 5 Describe a situation that the expression $-15 \div (-5)$ could represent. Find the quotient and tell what it represents in terms of the situation.

- 6 The low temperatures in degrees Fahrenheit in Marsh City during a week in January were:

$-3, -5, 3, 7, -2, -2, -5$

What was the average low temperature for that week?

Show your work.

Solution: _____

- 7 The quotient $x \div 5$ is a negative integer. Name two integers that x could represent and find the quotients.
