

# Chapter Review



## Frequently Asked Questions

**Q:** How can you divide integers?

**A:** You can use counters, a number line, or repeated subtraction. Or you can use a calculator. The models show that

$$(+)\div(+) = + \quad (-)\div(+) = - \quad (+)\div(-) = - \quad (-)\div(-) = +$$

Division question	Related multiplication	Counter model	Number line model
$12 \div 3 = 4$	$12 \div 3 = \square$ is related to $\square \times 3 = 12$	12 red counters can be divided into 4 groups of 3 red counters or into 3 groups of 4 red counters.	
$-12 \div (-3) = 4$	$-12 \div (-3) = \square$ is related to $\square \times (-3) = -12$	12 blue counters can be divided into 4 groups of 3 blue counters.	
$-12 \div 3 = -4$	$-12 \div 3 = \square$ is related to $\square \times 3 = -12$	12 blue counters can be divided into 3 groups of 4 blue counters.	
$12 \div (-3) = -4$	$12 \div (-3) = \square$ is related to $\square \times (-3) = 12$	Dividing a positive integer by a negative integer cannot be represented easily with counters or a number line.	

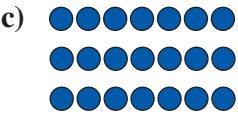
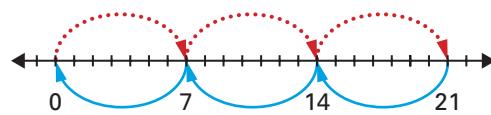
**Q:** How do you evaluate integer expressions that involve several operations?

**A:** Follow the same order of operations that you use with whole numbers and decimals.

For example,

$$\begin{aligned} & \frac{48 \div [2 + (-10)]}{(-1)[-9 - (-6)]} \\ &= \frac{48 \div (-8)}{(-1)(-9 + 6)} \\ &= \frac{-6}{(-1)(-3)} \\ &= \frac{-6}{3} \\ &= -2 \end{aligned}$$

## Practice Questions

- (6.2) 1. One day in October, the low temperature was  $-9^{\circ}\text{C}$  in Yellowknife,  $6^{\circ}\text{C}$  in Halifax,  $-8^{\circ}\text{C}$  in Whitehorse, and  $0^{\circ}\text{C}$  in Thunder Bay. What is the difference between the highest and lowest of these temperatures? (6.6)
- (6.2) 2. Use a positive integer and a negative integer to make each equation true.
- $\boxed{\phantom{0}} + \boxed{\phantom{0}} = -38$
  - $\boxed{\phantom{0}} - \boxed{\phantom{0}} = -38$
- (6.2) 3. Follow this sequence. Record each value as you go.
- Start with  $-83$ .
  - Add  $-14$ .
  - Subtract  $-36$ .
  - Add  $125$ .
- (6.2) 4. The depth of the Siberian Shelf in the Arctic Ocean varies from  $20\text{ m}$  to  $550\text{ m}$ . Use an integer to describe the range of its depth.
- (6.4) 5. The product of three consecutive integers is  $-720$ . What is the greatest of these three integers?
- (6.6) 6. Write a multiplication or division expression for each of the following.
- $-38 + (-38) + (-38) + (-38)$
  - You lose \$4 eight times.
  - 
  - Ryan walks  $-935\text{ m}$  at  $85\text{ m/min}$ . (The negative sign represents west.) For how long has Ryan been walking?
  - 
- (6.6) 7. What is the missing integer?  
 $-7 \times \boxed{\phantom{0}} = -1421$
8. Calculate. (6.6)
- $-4 \times 9$
  - $0 \times (-100)$
  - $-16 - (-10)$
  - $25 - 32$
  - $-189 \div 9$
  - $-390 \div (-10)$
9. Yuri says, “When you divide two integers with the same sign, the answer is always positive. When you divide two integers with different signs, the answer is always negative.” Is he correct? Explain. (6.6)
10. Rebecca is playing a game on a game board that has each integer from  $-30$  to  $30$ . She starts with a number and completes these three instructions, but not necessarily in this order. (6.6)
- Subtract  $-10$ .
  - Divide by  $-3$ .
  - Multiply by  $2$ .
- Rebecca ends with  $-8$ . Where might she have started?
11. Copy and complete each equation using  $+$ ,  $-$ ,  $\times$ , or  $\div$ . (6.7)
- $-58 \boxed{\phantom{0}} (-36) \boxed{\phantom{0}} (-15) = -37$
  - $-4 \boxed{\phantom{0}} (-3) \boxed{\phantom{0}} 28 = 40$
  - $-4 \boxed{\phantom{0}} (-3 \boxed{\phantom{0}} 28) = -100$
12. Estimate. (6.7)
- $9 \times (-3) + (-15) \div 3$
  - $-6 - (-8) \times 5 \div (-10)$
  - $(-45) \div 5 + 7 - (-12)$
  - $$\frac{90 \div (-3)}{2 - (-4)(-2)}$$
13. Melissa says, “When I combine integers using several operations, I always get the right answer if I do the operations from left to right.” Use examples to explain whether she is right or wrong. (6.7)