BLM 8-5

Target D-1 Extra Practice 1

1. Write each repeated addition as a multiplication statement, then calculate the answer. Example: (+4) + (+4) = (+2) × (+4) = +8

a) (+5) + (+5) + (+5) + (+5) = _____ × _____ = _____
b) (−9) + (−9) + (−9) = _____ × _____ = _____
c) (−2) + (−2) +(−2) +(−2) + (−2) = _____ × _____ = _____
d) (+3) + (+3) = _____ × _____ = _____

2. What multiplication statement does each set of integer chips represent?

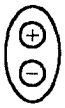
Example:  (+2) × (+3) = +6

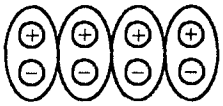
a) 

b) 

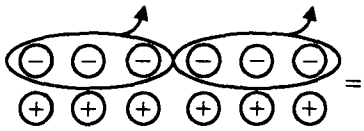
c) 

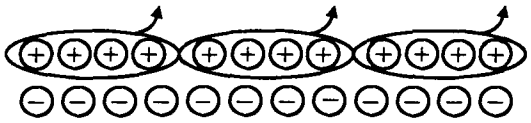
d) 

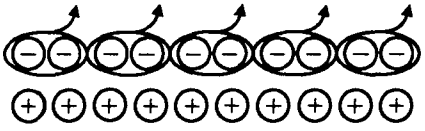
3. a)  This is an example of _____.

b)  This is an example of _____.

4. What multiplication statement do the following zero pairs model?

Example:  = ⊕ ⊕ ⊕ ⊕ ⊕ ⊕ (−2) × (−3) = +6

a)  = ⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖⊖

b)  = ⊕⊕⊕⊕⊕⊕⊕⊕⊕⊕

Extra Practice Answers

1. a) $(+4) \times (+5) = +20$
b) $(+3) \times (-9) = -27$
c) $(+5) \times (-2) = -10$
d) $(+2) \times (+3) = +6$

2. a) $(+3) \times (-2) = -6$
b) $(+4) \times (+3) = +12$
c) $(+2) \times (+5) = +10$
d) $(+1) \times (-8) = -8$

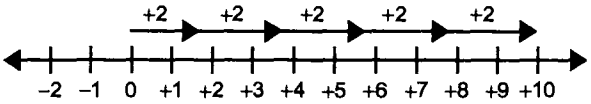
3. a) zero pair
b) four zero pairs

4. a) $(-3) \times (+4)$
b) $(-5) \times (-2)$

Target D-1 Extra Practice 2

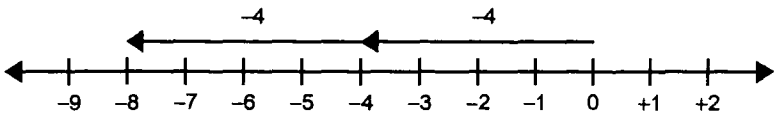
1. What multiplication statement does each diagram represent?

a)



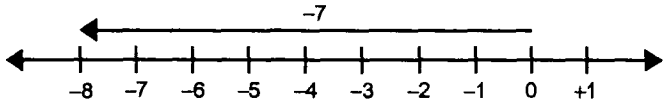
_____

b)



_____

c)



_____

2. Calculate.

a) (+12) × (+3) = _____

b) (−8) × (−6) = _____

c) (−9) × (+7) = _____

d) (−10) × 0 = _____

3. The product of two integers is −20. List all the possible multiplication statements to show this.

4. In hockey, a plus (+) is awarded every time you are on the ice for a goal your team scores and a minus (−) is given when you are on the ice when the other team scores. For eight straight games, Cassie has been on the ice when the opponents scored two goals. What is her plus/minus (+/−) score?

5. The sum of two integers is (−8). Their product is (+7). What are the two integers?

6. Write a word problem that you can solve using the expression (−3) × (−10).

Extra Practice Answers

1. a) $(+5) \times (+2) = +10$
b) $(+2) \times (-4) = -8$
c) $(+1) \times (-7) = -7$

2. a) $+36$
b) $+48$
c) -63
d) 0

3. $(+1) \times (-20)$; $(+2) \times (-10)$; $(+4) \times (-5)$; $(+5) \times (-4)$; $(+10) \times (-2)$; $(+20) \times (-1)$

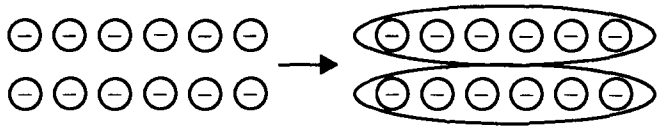
4. $(+8) \times (-2) = (-16)$

5. -1 and -7

6. Answers will vary. Example: Every time you go to the mall, you spend \$10. If you change your mind three times and you don't go to the mall (a non-occurrence or negative occurrence), then you don't spend \$10 ($-\$10$). $(-3) \times (-10) = (+30)$

Target D-1 Extra Practice 3

1. What division statement does each of the following diagrams represent?

a) 

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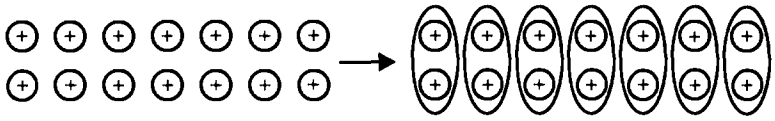
b) 

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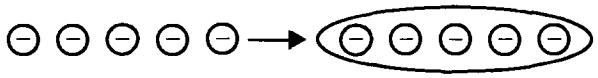
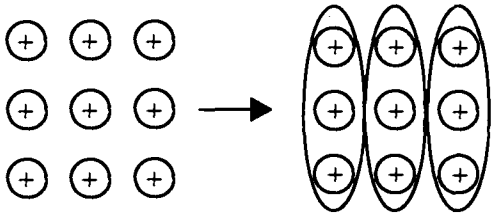
c) 

_____

d) 

_____

2. What colour of integer chips would you use to model each division statement?

a) $(\times 8) \div (-4)$ _____

b) $(+9) \div (+3)$ _____

c) $(-10) \div (+2)$ _____

3. In Winnipeg, the temperature at 10 p.m. was −16 °C. At 1 a.m. the temperature was −25 °C.

a) How many degrees did the temperature drop? _____

b) How many degrees per hour did the temperature drop?

_____

4. a) How do you show zero using integer chips?

b) How could you show 0 divided by 2 using integer chips?

Extra Practice Answers

1. a) $(-12) \div (+2) = -6$
b) $(+14) \div (+2) = +7$
c) $(-5) \div (+1) = -5$
d) $(+9) \div (+3) = +3$

2. a) blue
b) red
c) blue

3. a) 9 °C
b) 3 °C per hour

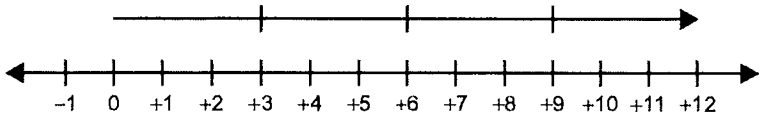
4. a) one blue and one red chip
b) Answers will vary. Example: Show two zero pairs divided into two groups of one zero pair each.

BLM 8-9

Target D-1 Extra Practice 4

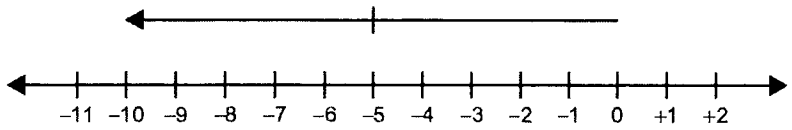
1. What division statement does each of the following diagrams represent?

a)



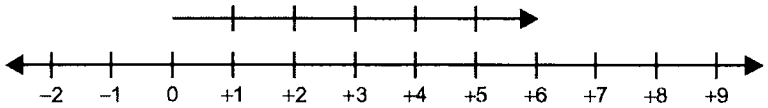
_____

b)



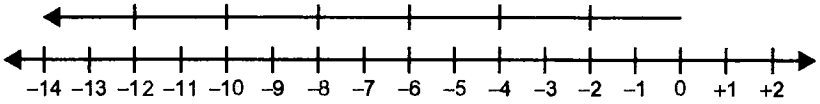
_____

c)



_____

d)



_____

2. Tell whether the resultant quotient is positive or negative.

a) (negative number) ÷ (positive number) _____

b) (positive number) ÷ (positive number) _____

c) (negative number) ÷ (negative number) _____

d) (positive number) ÷ (negative number) _____

3. Calculate.

a) (+56) ÷ (−7) = _____ **b)** (−45) ÷ (−15) = _____

c) (−36) ÷ (+12) = _____ **d)** (+60) ÷ (+10) = _____

4. Divide the dividend −8 by as many different integers as possible. Each quotient must be an integer. List all the possible division statements.

5. For each of the following questions, there are two different pairs of two integers that will work.

a) Which two integers have a product of +20 and a quotient of +5?

b) Which two integers have a product of −18 and a quotient of −2?

c) Which two integers have a product of +4 and a quotient of +4?

Extra Practice Answers

1. a) $(+12) \div (+3) = +4$
b) $(-10) \div (-5) = +2$
c) $(6) \div (+1) = +6$
d) $(-14) \div (-2) = +7$

2. a) negative
b) positive
c) positive
d) negative

3. a) -8
b) $+3$
c) -3
d) $+6$

4. $(-8) \div (+1) = -8$; $(-8) \div (-1) = +8$;
$(-8) \div (+2) = -4$; $(-8) \div (-2) = +4$;
$(-8) \div (+4) = -2$; $(-8) \div (-4) = +2$;
$(-8) \div (+8) = -1$; $(-8) \div (-8) = +1$

5. a) -10 and -2; $+10$ and $+2$
b) $+6$ and -3; -6 and $+3$
c) $+4$ and $+1$; -4 and -1

Target D-1 Extra Practice 5

1. Calculate using the order of operations.

a) $(+5) \times (-3) + (-6) \div (+3) =$ _____

b) $(-13) + [(+7) - (-4)] \times (+2) =$ _____

c) $(-2) - (+10) \div (-2) + (+8) =$ _____

2. In his last football game, Mounten, who plays running back, carried the ball seven times with the following results: gained 2 yards, gained 1 yard, gained 0 yards, lost 3 yards, gained 34 yards, lost 1 yard, gained 16 yards.

a) What was the total amount of yards Mounten gained after seven carries?

b) What was Mounten's mean gain per carry?

3. Add all of the integers from (+6) to (−5) inclusive.

a) What is the sum? _____

b) What is the mean? _____

4. Place brackets to get the following results.

a) $(+4) + (-2) \times (+6) - (+1) = -6$

b) $(+4) + (-2) \times (+6) - (+1) = +11$

c) $(+4) + (-2) \times (+6) - (+1) = +10$

d) $(+4) + (-2) \times (+6) - (+1) = -9$

Extra Practice Answers

1. a) −17 **b)** +9 **c)** +11

2. a) 49 yards **b)** 7 yards a carry

3. a) +6 **b)** +0.5

4. a) $(+4) + (-2) \times [(+6) - (+1)] = -6$
b) $[(+4) + (-2)] \times (+6) - (+1) = +11$
c) $[(+4) + (-2)] \times [(+6) - (+1)] = +10$
d) $[(+4) + (-2) \times (+6)] - (+1) = -9$

Target D-1

Extra Practice 1

Lesson 2.1: Using Models to Multiply Integers

1. **a)** Evaluate.

$(-3) + (-3) + (-3) + (-3)$

b) Explain why $(+4) \times (-3)$ has the same value as the expression in part a.

2. Use coloured tiles to find each product.

a) $(+4) \times (+3)$

b) $(+6) \times (-7)$

c) $(-5) \times (+3)$

d) $(-8) \times (-3)$

3. Use a number line to find each product.

a) $(+8) \times (+2)$

b) $(+3) \times (-4)$

c) $(-6) \times (+6)$

d) $(-9) \times (-2)$

4. The ice on Mattias's skating pond melted 2 cm every day for 5 days. Use integers to find the change in the depth of the ice after 5 days.

5. Aliya climbs down a ladder. The rungs on the ladder are 30 cm apart.

a) Aliya climbs down 2 rungs. Use integers to find her total change in elevation.

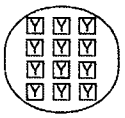
b) How much higher was Aliya before she climbed down 3 rungs?

Extra Practice 1 Answers

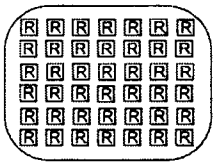
1. a) –12

b) Adding a number 4 times is the same as 4 times the number.

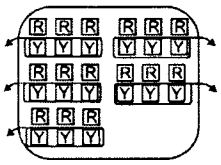
2. a) +12



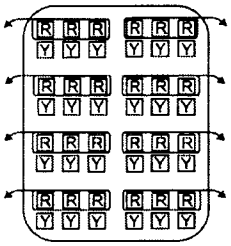
b) –42



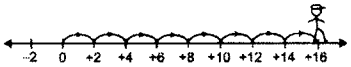
c) –15



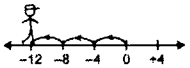
d) +24



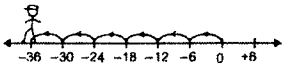
3. a) +16



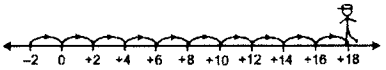
b) –12



c) –36



d) +18



4. (+5) × (–2) = –10; the ice melted 10 cm after 5 days.

5. a) (+2) × (–30) = –60; Aliya is 60 cm below her previous elevation.

b) (–3) × (–30) = 90; Aliya was 90 cm above her current elevation.

Target D-1

Extra Practice 2

Lesson 2.2: Developing Rules to Multiply Integers

1. Find each product. Then extend each pattern for three more rows. Tell how you did it.

a) $(+4) \times (+1) =$

$(+4) \times (0) =$

$(+4) \times (-1) =$

$(+4) \times (-2) =$

b) $(+1) \times (+5) =$

$(0) \times (+5) =$

$(-1) \times (+5) =$

$(-2) \times (+5) =$

2. **a)** When is the product of two integers positive?

b) When is the product of two integers negative?

3. Find each product.

a) $(+2)(-9)$

b) $(-2)(-6)$

c) $(+7)(-2)$

d) $(-3)(+4)$

e) $(-1)(-1)(-1)$

f) $(-1)(+5)(-1)(+5)$

4. Find each product.

a) $(+15) \times (+22)$

b) $(+20)(-43)$

c) $(-34) \times (-27)$

d) $(-62)(+11)$

e) $(+18) \times (-67)$

f) $(-31)(-52)$

5. Use these integers: $-1, +6, -8, +3, -2$

a) Which two integers have the greatest product?

b) Which two integers have the least product?

Justify your answers.

Extra Practice 2 Answers

1. a) +4; 0; –4; –8;
$(+4) \times (-3) = -12$
$(+4) \times (-4) = -16$
$(+4) \times (-5) = -20$

b) +5; 0; –5; –10;
$(-3) \times (+5) = -15$
$(-4) \times (+5) = -20$
$(-5) \times (+5) = -25$

2. a) The product of two integers is positive when the integers have the same sign.
b) The product of two integers is negative when the integers have opposite signs.

3. a) –18 **b)** +12
c) –14 **d)** –12
e) –1 **f)** +25

4. a) +330 **b)** –860
c) +918 **d)** –682
e) –1206 **f)** 1612

5. a) +3 and +6; the greatest product will be a product of two numbers with the same sign and largest size. So, it will be $(+3) \times (+6) = +18$ or $(-2) \times (-8) = +16$.

b) +6 and –8; the least product will be a product of two numbers with opposite signs and largest size. So, it will be $(+6) \times (-8) = -48$.

Target D-1

Extra Practice 3

Lesson 2.3: Using Models to Divide Integers

1. Use coloured tiles to find each quotient.

a) $(+15) \div (+3)$

b) $(+21) \div (-7)$

c) $(-24) \div (+3)$

d) $(-20) \div (-4)$

2. Use a number line to find each quotient.

a) $(+18) \div (+2)$

b) $(+16) \div (-4)$

c) $(-6) \div (+6)$

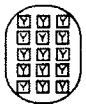
d) $(-9) \div (-3)$

3. The triple jump is a track and field event where an athlete takes a running start, then completes three jumps in succession. Romina records a distance of 18 m for her triple jump. What was the average distance of each jump?

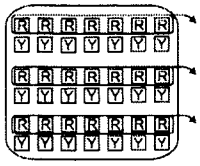
4. A stock drops 30 points in 5 days. Use integers to find the average drop in points per day.

Extra Practice 3 Answers

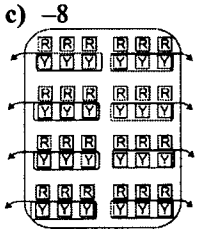
1. a) +5



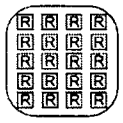
b) –3



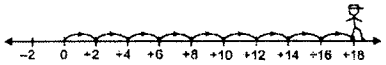
c) –8



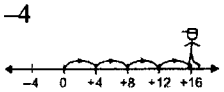
d) +5



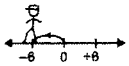
2. a) +9



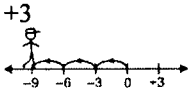
b) –4



c) –1



d) +3



3. 6 m

4. The stock drops an average of 6 points per day

Target D-1

Extra Practice 4

Lesson 2.4: Developing Rules to Divide Integers

1. **a)** Evaluate each expression.

Multiplication	**Division**
$(+4) \times (-2) =$	$(-8) \div (-2) =$
$(-3) \times (+5) =$	$(-15) \div (+5) =$
$(-2) \times (-3) =$	$(+6) \div (-3) =$
$(+3) \times (+6) =$	$(+18) \div (+6) =$

b) Look at the patterns in the signs in part a.
How are the rules for the sign of a quotient of two integers related to the rules for the sign of a product of two integers?

2. **a)** When is the quotient of two integers positive?

b) When is the quotient of two integers negative?

3. Divide.

a) $(-100) \div (-10)$ **b)** $(-72) \div (+9)$

c) $(+56) \div (-7)$ **d)** $(-42) \div (-6)$

e) $(0) \div (-6)$ **f)** $(-9) \div (-9)$

4. Find each quotient. Then order the numbers from least to greatest.

a) $(+10) \div (-2)$ **b)** $(-15) \div (-5)$

c) $(-36) \div (+12)$ **d)** $(0) \div (-10)$

e) $(-8) \div (-8)$ **f)** $(-48) \div (+12)$

5. Maya recorded the noon temperature each day for a week.
$-12°C, -8°C, 3°C, 0°C, 1°C, -3°C, 5°C$
What was the mean temperature?

Extra Practice 4 Answers

1. a) −8 +4
−15 −3
+6 −2
+18 +3

b) The rules are similar. The sign of the product of two integers with the same sign is positive and the sign of the quotient of two integers with the same sign is positive. The sign of the product of two integers with opposite signs is negative and the sign of the quotient of two integers with opposite signs is negative.

2. a) The quotient of two integers is positive when the integers have the same sign.
b) The quotient of two integers is negative when the integers have opposite signs.

3. a) +10 **b)** −8
c) −8 **d)** +7
e) 0 **f)** +1

4. a) −5 **b)** +3
c) −3 **d)** 0
e) +1 **f)** −4
−5, −4, −3, 0, +1, +3

5. −2°C

Target D-1

Extra Practice 5

Lesson 2.5: Order of Operations with Integers

1. Evaluate. State which operation you do first.

a) $8 \times 5 - 4$

b) $(-4)[(-4) + 9]$

c) $18 \div [(-7) - 2]$

d) $(-3) + (-14) \div (-2)$

2. Evaluate. Show all steps.

a) $4(-8) - 9$

b) $(-1) + (-20) \div 5$

c) $(-9) + (-4)(-2)$

d) $(-3)[(-8) - 11]$

3. Evaluate.

a) $\dfrac{(-5)+(-9)}{2}$

b) $\dfrac{-12}{(-2)(-3)}$

c) $\dfrac{24 \div (-6) - 1}{-5}$

d) $\dfrac{36}{(-5) \times 2 + 4}$

4. Evaluate.

a) $(-72) \div 9 + 4 \times (-3)$

b) $5(-2) - 63 \div (-7)$

c) $\dfrac{4(-5) + [28 \div (-4)]}{5 \times (-2) + 1}$

d) $\dfrac{4 \times (-4) + (-8)}{[10 + (-1)] + [2 \times (-3)]}$

5. Evaluate each expression. Then insert one pair of square brackets in each expression so it evaluates to -1.

a) $12 \div (-4) + (-8)$

b) $(-9) + 6 \div 3$

c) $5 \div (-5) \times 0 + 1$

Extra Practice 5 Answers

1. **a)** 36; Multiplication
b) –20; Addition inside brackets
c) –2; Subtraction inside brackets
d) 4; Division

2. **a)** $4(-8) - 9$
$= -32 - 9$
$= -41$
b) $(-1) + (-20) \div 5$
$= (-1) + (-4)$
$= -5$
c) $(-9) + (-4)(-2)$
$= (-9) + 8$
$= -1$
d) $(-3)[(-8) - 11]$
$= (-3)(-19)$
$= 57$

3. **a)** –7 **b)** –2
c) 1 **d)** –6

4. **a)** –20 **b)** –1
c) 3 **d)** –8

5. **a)** –11; $12 \div [(-4) + (-8)]$
b) –7; $[(-9) + 6] \div 3$
c) 1; $5 \div (-5) \times [0 + 1]$