

### 8.3: Applying Integer Operations

## BEDMAS

Calculate the following:

$$\begin{aligned} & (-10) \div (-2) - (+4) \times (+6) = \\ & = (+5) - (+24) \\ & = -19 \end{aligned}$$

$$\begin{aligned} & (-16) \div [(+5) - (+6) + (-7)] = \\ & = (-16) \div [(-1) + (-7)] \\ & = (-16) \div (-8) \\ & = +2 \end{aligned}$$

$$\begin{aligned} & (-3) + (-4) \times (-2) - (+6) = \\ & = (-3) + (+8) - (+6) \\ & = (+5) - (+6) \\ & = -1 \end{aligned}$$

$$\begin{aligned} & (-2) - (+4) \times (-5) \div (+2) = \\ & = (-2) - (-20) \div (+2) \\ & = (-2) - (-10) \\ & = +8 \end{aligned}$$

Can you predict whether:  $(-) \times (-) \times (-) - (-) \times (-) \times (-)$  is positive or negative?

$$\begin{aligned} & (+) \times (-) - (+) \times (-) \\ & (-) - (-) \\ & (-) + (+) \end{aligned}$$

You cannot predict unless you know what the numbers are.

Johnny has \$4, he has to repay Gary \$3, but he collects \$7 from Karen. He goes to the roulette table and doubles his money. Write an equation to model this situation.

$$\begin{aligned} & [(+4) - (+3) + (+7)] \times 2 \\ & = [(+1) + (+7)] \times 2 \\ & = +16 \quad \underline{\$16} \end{aligned}$$

When working with integers, it is important to remember what the integer means!

Joe is on a staircase, and climbs -3 steps every second. How high up the staircase is he after 4 seconds?

$$(-3) \times 4 = -12$$

He is 12 steps down after 4 seconds.

A submarine climbs 50m in 40 seconds. How fast is it ascending?

going up.

$$50\text{m} \div 40 \text{ sec}$$

$$= \frac{5}{4} = 1 \frac{1}{4} = 1.25 \text{ m/second}$$

For the past 6 weeks, Frederick has deposited \$30 every week. However, for the past 4 weeks, he has had to withdraw \$50. Using only addition statements, write an equation to show how much his bank balance has changed by.

$$\text{Week: } \begin{matrix} 1 & 2 & 3 & 4 & 5 & 6 \\ (+30) & (+30) & (+30+(-50)) & ((+30)+(-50)) & (+30+(-50)) & (+30+(-50)) \end{matrix}$$

$$= (+30) + (+30) + (-20) + (-20) + (-20) + (-20)$$

$$= (+60) + (-40) + (-40)$$

$$= (+20) + (-40)$$

$$= -20$$

\$20 in debt.

OR

$$\begin{aligned} & (+30) \times 6 + (4 \times (-50)) \\ & = +180 + (-200) \\ & = -20 \end{aligned}$$