

A scuba diver swam...



Where did he end up?

60

INTEGER

(positive and negative whole numbers &)

OPERATIONS



Think: Adding two DESCENTS together goes EVEN DEEPER. Adding two ascents together is rising EVEN HIGHER.

ADDING
 $pos + pos = pos$ ^{BIG}
 $neg + neg = super neg$
 $pos + neg = depend which is bigger$

Think: An ascent can partially cancel out or overcome a descent, or...

SUBTRACT
 Start — less pos
 go left
 Start — neg
 go right

- ① $6 + -13 = -7$
- ② $-8 + -9 = -17$
- ③ $12 - 21 = -9$
- ④ $4 - 7 = 11$
- ⑤ $-3 - 10 = -13$
- ⑥ $-5 - -18 = 13$

Another great analogy for understanding integers is ████████ is ████████. Think about adding and removing (subtracting) credits and debts. Example: Removing a debt is a positive movement!

Think: Removing a recent descent is actually rising again, removing a recent ascent is the same as descending again.



Name: _____



PRACTICE WITH INTEGER OPERATIONS



Simplify each expression.

MULTIPLY & DIVIDE

$+ \times - = -$

$+ \div - = -$

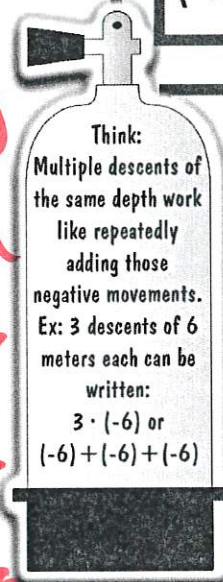
1 neg = neg



$- \times - = +$

$- \div - = +$

2 neg = pos



Example 1: $(-4) + (-16) = -20$

Example 2: $9 + (-12) = -3$

Example 3: $(-24) \div (-3) = 8$

Example 4: $15 \cdot (-3) = -45$

Example 5: $(-17) - 21 = -38$

Example 6: $4 - (-30) = 34$

Example 7: $(-35) - (-40) = 5$

CHALLENGE

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Alicia withdrew 45 dollars from her bank account. Later that day, she deposited \$80, then wrote a check for \$250. Last, she spent another \$55 from the account while shopping with her direct debit card. What was her total gain or loss in funds from the account that day? Write an integer expression, then simplify.

$-45 + 80 - 250 - 55 = -270$

$3 + (-5) + 8 = 6$ $(-2) + (-5) + (-4) = -11$

$(-4)(5)(-1)(3) = 60$ $4 \cdot (-2)(-3)(-5) \cdot 2 = -240$

NOTE:

When multiplying or dividing 3 or more integers, if the number of negatives is **EVEN**, but if it is **ODD**.

Name: