3.4

Solving Equations Using Multiplication and Division

Multiplying Integers Review

Multiply numbers like regular multiplication… however…

POSITIVE X POSITIVE =
POSITIVE X NEGATIVE =
NEGATIVE X POSITIVE =
NEGATIVE x NEGATIVE =

1) $5 \times -3 =$

2) $-6 \times 4 =$

3) $-3 \times -6 =$

4) $-9 \times 3 =$

Dividing Integers Review

Divide numbers like regular division… however…

POSITIVE ÷ POSITIVE =
POSITIVE ÷ NEGATIVE =
NEGATIVE ÷ POSITIVE =
NEGATIVE ÷ NEGATIVE =

1) $8 \div -4 =$

2) $-20 \div 4 =$

3) $-9 \div -7 =$

4) $-24 \div 3 =$

Key Ideas

_____ and _____ are inverse operations

_____ and _____ are inverse operations

Multiplication Property of Equality:

_____ the _____ number to _____ _____ of an equation produces an equivalent equation.

If $a = b$, then $a \cdot c = b \cdot c$

Division Property of Equality:

_____ the _____ number to _____ _____ of an equation produces an equivalent equation.

If $a = b$, then $a \div c = b \div c$, $c \neq 0$

1) $6x = 42$

$$2)\ \frac{x}{5} = 7$$

$$3)\quad -3x = 45$$

$$4)\quad 12 = \frac{x}{5}$$

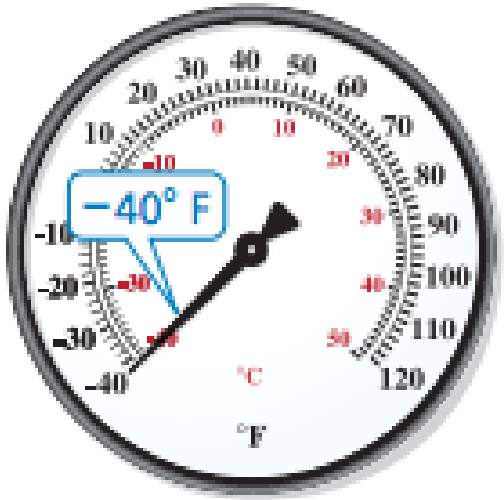
$5)\quad -x = -8$

6) $\frac{2}{3}x = 4$

7) $\frac{1}{2}x = 10$

Real-Life Appliction

The record low temperature in Arizona is 1.6 times the record low temperature in Rhode Island. What is the record low temperature in Rhode Island?



Record low temperature in Arizona

Real-Life Appliction

The record low temperature in Hawaii is -0.15 times the record low temperature in Alaska. The record low temperature in Hawaii is 12 F. What is the record low temperature in Alaska?

PRACTICE

Solve the following:

1) $4x = 32$

2) $6x = 42$

3) $9x = 54$

PRACTICE

Solve the following:

4) $-3x = 21$

5) $7x = -28$

6) $-8x = 72$

PRACTICE

Solve the following:

7) $\frac{x}{9} = 6$

8) $\frac{x}{7} = 5$

PRACTICE

Solve the following:

9) $\frac{x}{-2} = 6$

10) $\frac{x}{-9} = -3$

PRACTICE

Solve the following:

11) $\frac{x}{5} = -10$

12) $\frac{x}{-4} = 16$

PRACTICE

Solve the following:

13) $\frac{1}{2}x = 3$

14) $\frac{3}{4}x = 21$