

Integers & Grouping Symbols

Refresh:

Adding

$$-4 + -7 = -11$$

start



direction

end

point

distance

Subtracting

Add the opposite.

$$-4 - 8 = -4 + -8$$

$$10 - (-3) = 10 + 3$$

Multiplying & Dividing

Love & Hate Rules

★ PEMDAS
P → M → D → A → S
L → R

★ { [()] } Grouping Symbols = P

work inside out

Ex. $10 - 8[(3 - 4) - (8 + -10)]$

$$= 10 - 8[(-1) - (-2)]$$

$$= 10 - 8[-1 + 2]$$

$$= 10 - 8[1]$$

$$= 10 - 8$$

$$= 2$$

LESSON 2 **Integers and Rational Numbers**
Puzzles, Twisters & Teasers: Chill Out!

Add each pair of integers. Write the letter on the line above the correct answer at the bottom of the page to solve this riddle:

Why did the girl put her money in the freezer?

R $7 + (-16)$

S $-3 + 10$

L $-6 + (-13)$

H $-7 + (-81)$

O $-1 + (-5)$

E $2 + (-20)$

C $25 + 14$

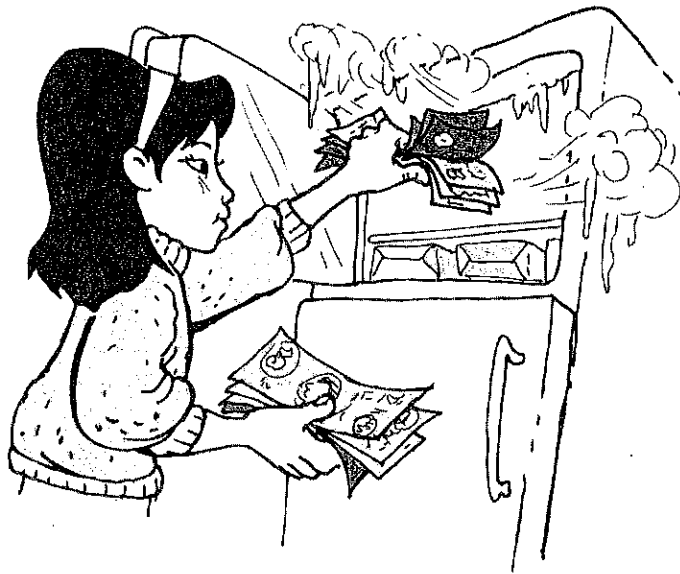
W $-3 + 28$

D $9 + 4$

A $-5 + (-12)$

T $6 + (-22)$

N $8 + (-7)$



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|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| <u> </u> | <u> </u> | <u> </u> | <u> </u> | <u> </u> | <u> </u> | <u> </u> | <u> </u> | <u> </u> |
| 7 | -88 | -18 | 25 | -17 | 1 | -16 | -18 | 13 |
| <u> </u> | <u> </u> | <u> </u> | <u> </u> | <u> </u> | <u> </u> | <u> </u> | <u> </u> | <u> </u> |
| 39 | -6 | -19 | 13 | -88 | -17 | -9 | 13 | 39 |
| | | | | | | | | -17 |
| | | | | | | | | 7 |
| | | | | | | | | -88 |

LESSON
3

Integers and Rational Numbers

Puzzles, Twisters & Teasers: Integer Invasion!

Subtract each pair of integers. Write the letter on the line above the correct answer at the bottom of the page to answer the following question:

What do you call a pan spinning through space?

- C $-12 - (-2)$
- A $-1 - 8$
- J $-3 - (-8)$
- N $6 - 10$
- B $-31 - 15$
- U $12 - (-6)$
- O $-15 - 15$
- I $30 - (-20)$
- G $-22 - (-5)$
- D $-4 - 21$
- Y $27 - 19$
- E $-10 - (-7)$
- R $2 - 9$
- T $-5 - 9$
- F $-8 - (-2)$



- | | | | | | | | | | | | | | | |
|----------------|----------------|----------------|-----------------|----------------|-----------------|-----------------|-----------------|-----------------|----------------|----------------|-----------------|-----------------|--|--|
| $\frac{-9}{-}$ | $\frac{-4}{-}$ | | | | | | | | | | | | | |
| $\frac{18}{-}$ | $\frac{-4}{-}$ | $\frac{50}{-}$ | $\frac{-25}{-}$ | $\frac{-3}{-}$ | $\frac{-4}{-}$ | $\frac{-14}{-}$ | $\frac{50}{-}$ | $\frac{-6}{-}$ | $\frac{50}{-}$ | $\frac{-3}{-}$ | $\frac{-25}{-}$ | | | |
| $\frac{-6}{-}$ | $\frac{-7}{-}$ | $\frac{8}{-}$ | $\frac{50}{-}$ | $\frac{-4}{-}$ | $\frac{-17}{-}$ | | $\frac{-30}{-}$ | $\frac{-46}{-}$ | $\frac{5}{-}$ | $\frac{-3}{-}$ | $\frac{-10}{-}$ | $\frac{-14}{-}$ | | |

LESSON

4

Integers and Rational Numbers**Review for Mastery: Multiplying and Dividing Integers**

Look for the patterns in these products and quotients.

$$\begin{array}{cccc}
 1 \cdot 3 = 3 & -1 \cdot 3 = -3 & 3 \div 1 = 3 & 3 \div (-1) = -3 \\
 2 \cdot 3 = 6 & -2 \cdot 3 = -6 & 6 \div 2 = 3 & 6 \div (-2) = -3 \\
 -3 \cdot (-3) = 9 & 3 \cdot (-3) = -9 & -9 \div (-3) = 3 & -9 \div 3 = -3 \\
 -4 \cdot (-3) = 12 & 4 \cdot (-3) = -12 & -12 \div (-4) = 3 & -12 \div 4 = -3
 \end{array}$$

Look at how to find the signs of the products.

- The product of two integers with the **same sign** is **positive**.

$$(+)\cdot(+)=(+)\qquad (-)\cdot(-)=(+)$$

- The product of two integers with **different signs** is **negative**.

$$(+)\cdot(-)=(-)\qquad (-)\cdot(+)=(-)$$

Look at how to find the signs of the quotients.

- The quotient of two integers with the **same sign** is **positive**.

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

- The quotient of two integers with **different signs** is **negative**.

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

Find each product or quotient.

1. $-5 \cdot 4$

2. $2 \cdot (-8)$

3. $-1 \cdot (-1)$

4. $-6 \cdot 3$

5. $7 \cdot (-3)$

6. $-8 \cdot (-4)$

7. $-6 \cdot 5$

8. $-9 \cdot (-9)$

9. $36 \div (-4)$

10. $-27 \div 9$

11. $-24 \div (-6)$

12. $-30 \div 5$

13. $18 \div 6$

14. $32 \div (-8)$

15. $-45 \div 9$

16. $-40 \div (-10)$

LESSON 4 **Integers and Rational Numbers**
Puzzles, Twisters & Teasers: It's Raining Money!

Solve the equations. Then use the letter associated with the answer to solve the riddle.

- H $3 \cdot (-3) =$ _____
- E $4 \cdot 2 =$ _____
- N $4 \cdot (-2) =$ _____
- T $-4 \cdot 3 =$ _____
- I $3 \cdot 3 =$ _____
- S $2 \cdot (-3) =$ _____
- C $-4 \cdot 1 =$ _____
- G $3 \cdot 2 =$ _____
- A $-3 \cdot -4 =$ _____
- R $5 \cdot 2 =$ _____

When does it rain money?

W

-9 8 -8 -12 -9 8 10 8

9 -6 -4 -9 12 -8 6 8 9 -8

W

-12 -9 8 8 12 -12 -9 8 10

