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Multiplying and Dividing Integers Guided Notes

Rules for Multiplying Integers

Rule 1:

If the integers have the same signs then the product will be positive.

$(+) * (+) = (+)$

$(-) * (-) = (+)$

Rule 2:

If the integers have different signs then the product will be **negative.**

$(-) * (+) = (-)$

$(+) * (-) = (-)$

Sample Problem 1: **Find the product of each expression below using the rules for multiplying integers.**

a. $\mathbf{14 * 2 =}$ $\quad \mathbf{14 * 2 = 28}$

b. $\mathbf{(-10) * (-4) =}$ $\quad \mathbf{(-10) * (-4) = 40}$

c. $\mathbf{(-13) * (-13) =}$ $\quad \mathbf{(-13) * (-13) = 169}$

d. $\mathbf{12 * 21 =}$ $\quad \mathbf{12 * 21 = 252}$

Sample Problem 2: **Find the product of each expression below using the rules for multiplying integers.**

a. $\mathbf{(-13) * 14 =}$ $\quad \mathbf{(-13) * 14 = -182}$

b. $\mathbf{18 * (-10) =}$ $\quad \mathbf{18 * (-10) = -180}$

c. $\mathbf{(-7) * 22 =}$ $\quad \mathbf{(-7) * 22 = -154}$

d. $\mathbf{100 * (-10) =}$ $\quad \mathbf{100 * (-10) = -1,000}$

Rules for Dividing Integers

Rule 1:

If the integers have the same signs then the quotient will be **positive.**

$(+) \div (+) = (+)$ $\quad$ ***or*** $\quad \frac{(+)}{(+)} = (+)$

$(-) \div (-) = (+)$ $\quad$ ***or*** $\quad \frac{(-)}{(-)} = (+)$

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Multiplying and Dividing Integers Guided Notes

Rule 2:

If the integers have different signs then the quotient will be **negative.**

$(-) \div (+) = (-)$ *or* $\frac{(-)}{(+)} = (-)$

$(+) \div (-) = (-)$ *or* $\frac{(+)}{(-)} = (-)$

Sample Problem 3: **Find the quotient of each expression below using the rules for dividing integers.**

a. $234 \div 2 =$

$234 \div 2 = 117$

b. $(-1,000) \div (-4) =$

$(-1,000) \div (-4) = 250$

c. $(-196) \div (-14) =$

$(-196) \div (-14) = 14$

d. $\frac{-225}{-5} =$

$\frac{-225}{-5} = 45$

Sample Problem 4: **Find the quotient of each expression below using the rules for dividing integers.**

a. $(-432) \div 9 =$

$(-432) \div 9 = -48$

b. $2,025 \div (-45) =$

$2,025 \div (-45) = -45$

c. $\frac{-216}{36} =$

$\frac{-216}{36} = -6$

d. $1,024 \div (-16) =$

$1,024 \div (-16) = -64$

Sample Problem 5: **Solve each expression below.**

a. $(-12) * (-140) \div 8 =$

$(-12) * (-140) \div 8 =$
$= 1,680 \div 8 =$
$= 210$

b. $128 \div 4 * (-14) =$

$128 \div 4 * (-14) =$
$= 32 * (-14) =$
$= -448$

c. $(-100) \div [20 \div (-10)]^2 =$

$(-100) \div [20 \div (-10)]^2 =$
$= (-100) \div [-2]^2 =$
$= (-100) \div 4 =$
$= -25$

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Multiplying and Dividing Integers Guided Notes

Combined operations on integers

Sample Problem 6: Solve each expression below using order of operations.

a. $(-23)+[45+(-15)]*(-14)-8=$

$$\begin{aligned}&(-23)+[45+(-15)]*(-14)-8=\\&=(-23)+[30]*(-14)-8=\\&=(-23)+(-420)-8=\\&=(-443)-8=\\&=(-443)+(-8)=\\&=-451\end{aligned}$$

b. $28\div 4+[225\div(-5)]-(-24)=$

$$\begin{aligned}&28\div 4+[225\div(-5)]-(-24)=\\&=28\div 4+[-45]-(-24)=\\&=7+[-45]-(-24)=\\&=-38-(-24)=\\&=-38+24=\\&=-14\end{aligned}$$

c. $(-10)*[1,200\div(-100)]^2-[15\div(-3)]=$

$$\begin{aligned}&(-10)*[1,200\div(-100)]^2-[15\div(-3)]=\\&=(-10)*[-12]^2-[15\div(-3)]=\\&=(-10)*144-[-5]=\\&=-1,440-[-5]=\\&=-1,440+5=\\&=-1,435\end{aligned}$$