**MULTIPLYING REAL NUMBERS**

* The product of two real numbers with the same sign is positive.
* The product of two real numbers with different signs is negative.

**Sample Problem 1**: Find the product.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | $$-4\left(6\right)$$ |  | $$\left(-21\right)\left(-3\right)$$ |  | $$11\left(-7\right)$$ |

**Sample Problem 2**: Simplify each expression.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | $$3\left(-4x\right)-15x$$ |  | $$3s\left(-8r\right)$$ |  | $$\left(8x\right)\left(-9y\right)-12xy$$ |

**Sample Problem 3**: Evaluate each expression if $n=\frac{2}{5}$.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | $$n^{2}\left(-\frac{5}{8}\right)$$ |  | $$5n$$ |  | $$15n+6$$ |

**Sample Problem 4**: An average person need to drink 3 liters of water a day. How many liters of water an average person drinks in a month?

**DIVISION RULE**

To divide a number $a$ by a nonzero number $b$, multiply $a$ by the reciprocal of $b$.

The result is the quotient of $a$ and $b$.

**Sample Problem 5**: Find the quotient.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | $$-66÷11$$ |  | $$\frac{48}{-3}$$ |  | $$\frac{1}{^{3}/\_{4}}$$ |

**THE SIGN OF A QUOTIENT**

* The quotient of two numbers with the same sign is positive
* The quotient of two numbers with opposite signs is negative.

**Sample Problem 6**: Simplify each expression.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | $$\frac{24-8x}{4}$$ |  | $$\frac{32x-8}{4}$$ |  | $$\frac{45+10x}{5}$$ |

**Sample Problem 7**: Evaluate each expression if $a=-3$ and $b=-2$.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | $$\frac{2a}{a-b}$$ |  | $$\frac{4-b}{a^{2}}$$ |  | $$\frac{a}{3-b}$$ |

**Sample Problem 8**: Russia has a land area of $17,098,242 km^{2}$ Russia is approximately seven times bigger than Algeria in terms of land area. What is the land area of Algeria?