

Lesson Summary

Multiplying and dividing using the strict order of the operations in an expression is not always efficient. The properties of multiplication allow us to manipulate the expression by rearranging and regrouping factors that are easier to compute (like grouping factors 2 and 5 to get 10).

Where division is involved, we can easily rewrite the division by a number as multiplication by its reciprocal, and then use the properties of multiplication.

If an expression is only a product of factors, then the sign of its value is easily determined by the number of negative factors: the sign is positive if there are an even number of negative factors and negative if there is an odd number of factors.

Problem Set

- Evaluate the expression $-2.2 \times (-2) \div \left(-\frac{1}{4}\right) \times 5$
 - Using the order of operations only.
 - Using the properties and methods used in Lesson 16.
 - If you were asked to evaluate another expression, which method would you use, (a) or (b), and why?
- Evaluate the expressions using the distributive property.
 - $\left(2\frac{1}{4}\right) \times (-8)$
 - $\frac{2}{3}(-7) + \frac{2}{3}(-5)$
- Mia evaluated the expression below but got an incorrect answer. Find Mia's error(s), find the correct value of the expression, and explain how Mia could have avoided her error(s).

$$0.38 \times 3 \div \left(-\frac{1}{20}\right) \times 5 \div (-8)$$

$$0.38 \times 5 \times \left(\frac{1}{20}\right) \times 3 \times (-8)$$

$$0.38 \times \left(\frac{1}{4}\right) \times 3 \times (-8)$$

$$0.38 \times \left(\frac{1}{4}\right) \times (-24)$$

$$0.38 \times (-6)$$

$$-2.28$$