

Math 5e, Fall 2025 Homework 3

Homework #3 due October 12

Instructions: Some problems were solved in class, and some are new. Review the topics from the Class Work first and attempt all homework problems. **Write on separate sheets of paper, not between the lines of this handout, and show your work. Explain in words what is hard to do and why.**

1. Compute the following operations with fractions:

(a) $1\frac{7}{8} \times \frac{18}{5}$

(b) $2\frac{4}{7} \div \frac{4}{21}$

(c) $\frac{13}{7} - \frac{7}{13}$

2. Find the values of these algebraic expressions:

(a) $a + b + c =$

for $a = 17, b = -2\frac{1}{4}, c = -17;$

(b) $34 - a - 72 + a + 12 + a =$

for $a = -54$, and then for $a = 11;$

3. Rewrite each of the expressions below in the simplest possible form by collecting the like terms

(a) $2x + 7 + 5x + 2 + 3x =$

(b) $3x + 9 + 5xy + 2xy + 3 =$

(c) $2x + 16 - 5x(2y + 1) + 3 =$

(d) $2a + 1 + 3(a - 2) =$

4. Solve the following equations

(a) $2 + x - 40 = 30$

(d) $3x + 2 = 44$

(b) $-5x = 4 - 6x$

(e) $5(x + 4) = 45$

(c) $2x = 96$

5. Rewrite the expression as fractions

(a) $a \div 4 + 2 + 1 \div (1 + y) =$

(b) $(y + c \div d) - (b \div d) =$

(c) $a \div (4 - 5 + b) =$

(d) $a \div (4 - 5 + b) \div c =$

6. Can you divide (draw with a ruler) a triangle into 4 new triangles in such a way that any two new triangles have a common boundary (not just a point, but share a line segment!).

7. Below are some examples from a multiplication table in an unknown language. All of the products are numbers less than or equal to 20.

pe×nei = nei la nei

nei×hato = liomu la pe

hato×hato = nei la tano

pe×pe = nei

pe×tano = liomu

hato×* = liomu la tano

*×pe = liomu la nei

What numbers should be there in place of *?