

Math 5b:**Homework #4**

1. Simplify the following expressions:

(a) $3(2x - 1)$

(b) $2 - (1 - x)$

(c) $7x - (3x + 15)$

(d) $\frac{3}{5}(x - 5 + 6)$

(e) $3(2x - 1) + x$

(f) $2a(a - 2) - a(a - 1)$

(g) $(2x - 1)(x - 1)$

(h) $x - \frac{2}{5}x - (5 + \frac{2}{7}x - 8)$

2. Solve the equations:

(a) $14x + 8 = 12 - 10x$

(b) $\frac{3}{4}x = \frac{3}{5}x + 3$

(c) $3(3x - 1) = 2(2x + 11)$

(d) $5(x - 2) = 3x + 20$

(e) $x - 3 = a$

(f) $x : 5 = b$

(g)* $(x - 3) / 5 - a = b$

3. A father is twice as old as his son. The sum of their ages is 48 years. How old is each of them?

4. (a) Show that $(a + 1)(a - 1) = a \cdot a - 1$ (hint: use $(a + 1) = y$)

(b) Without a calculator, calculate 199999×200001

5. An orange costs 2 cents more than an apple. A grapefruit costs as much as 3 oranges. A fruit basket consists of 10 apples, 5 oranges, and a grapefruit.

(a) If the price of an apple is a , what is the price of an orange? A grapefruit? Simplify your expressions

(b) If the fruit basket costs \$1.96, how much does each fruit cost?

Remember for the problem below: Speed – V, Time – t, Distance – S; $S = Vt$

6. Two secretaries, Barbara and Mary, need to type a document. Barbara can type it in 4 hours, Mary types slower, so it would take her 5 hours to do this. How fast can they type, if they divide the work between the two of them in the most efficient way?

a) The document is 200 pages;

b) The document is 300 pages;

c) * The document is X pages. Explain your answer.

7. The list below shows some dates written in Swahili:

tarehe tatu Disemba jumamosi

tarehe pili Aprili jumanne

tarehe nne Aprili jumanne

tarehe tano Octoba jumapili

tarehe tano Octoba jumatatu

tarehe tano Octoba jumatano

Here are their English translations (in a different order!):

October 5, Monday

April 2, Tuesday

October 5, Wednesday

October 5, Sunday

December 3, Saturday

April 4, Tuesday

Write the following dates in Swahili:

April 3, Wednesday; December 2, Sunday; December 5, Monday.