

1. Solve the following quadratic equations:

a. $x^2 - 6x + 8 = 0$

b. $x^2 - x - 2 = 0$

c. $x^2 + 4x + 15 = 0$

d. $5x^2 + 8x - 9 = 0$

e. $3x^2 - 5x - 2 = 0$

b. $x^2 + 5x + 6 = 0$

2. Two pipes fill together a pool in 1 h and 20 minutes. If the first pipe is open for 10 minutes, and the second pipe is open for 12 minutes, the pool will be filled on $\frac{2}{15}$. How fast each pipe will fill the pool?
3. Simplify the expression:

$$(x^2 + y^2 + x + y)(x + y + xy) =$$

4. In a restaurant, customer can order a cheese platter for \$15 or \$20. For \$15 platter, you can choose 3 different kind of cheese out of 15 and for \$20 platter you can choose 5 different kind of cheese. How many different ways are there to create these two cheese platters?

5. Solve the equations:

a. $|2x - 8| = 10;$

b. $||x + 1| - 3| = 1$

6. The city currently has 48,400 inhabitants. It is known that the population of this city is increasing annually by 10%. How many inhabitants were in the city two years ago?