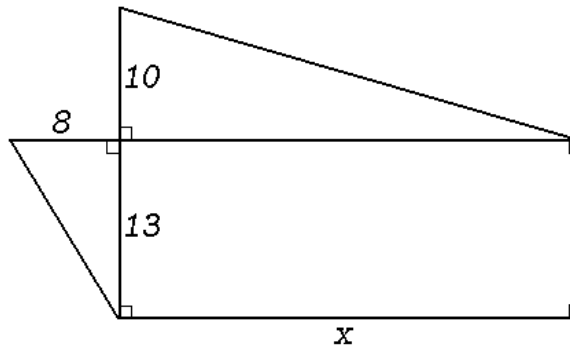


1. Compute the average of the prime numbers between 10 and 25.
2. Compute the value of  $x$  if we know that the object on the picture has area  $700 \text{ unit}^2$ .



3. Evaluate  $\frac{-x^2 + x + 2}{-x - 1}$  if
  - a)  $x = -3$
  - b)  $x = -\frac{1}{2}$
4. Simplify each of the following expressions.
 

a) $(2x - 1)^2$	f) $(-3a^2)^{-2}$	i) $\frac{3^2(-2)^3}{2^{-1} \cdot 3^0}$
b) $(2x - 1)^3$	g) $\frac{x^2 y^{-1}}{-x^{-3}(-y)^2}$	j) $\frac{3^2 + (-2)^3}{2^{-1} + 3^0}$
c) $(-3a^2)(-3a)^2$	h) $(-2a^{25}b)^0 \left(\frac{1}{3}a^4b\right)^0$	k) $\sqrt{2\sqrt{16} + 1}$
d) $-3a^2 + (-3a)^2$		
e) $(-3a^2)^2$		
5. Factor out  $-1$  from each of the following. Present your answer in terms organized by degree from highest to lowest.
  - a)  $8x^3 - x^5 + 3x^2 + 2$
  - b)  $2 - x$
6. Factor each of the following by grouping.
  - a)  $3x^2 - 5x + 6x - 10$
  - b)  $6x^2 + 4x - 3x - 2$
  - c)  $5x^2 - 10x + x - 2$
7. Completely factor each of the following polynomials.
  - a)  $x^2 - 1$
  - b)  $45b - 90a + 10ax^2 - 5bx^2$
8. Solve each of the following equations. Make sure to check your solutions.
  - a)  $\frac{x-1}{3} - \frac{x}{5} = \frac{x}{2} - 4$
  - b)  $(2x-1)^2 + (x+3)^2 = 4x^2 + 10$
  - c)  $x + 3x^2 = 10$
9. Find the value of  $k$  if we know that the slope between  $A(3, 8)$  and  $B(7, k)$  is
  - a) 1
  - b)  $\frac{1}{2}$
  - c)  $-2$
10. a) Graph the straight lines  $2x - 3y = 3$  and  $x + y = 9$  in the same coordinate system. Where do they intersect?  
 b) Use algebraic methods to check your answer.
11. Solve each of the following systems of linear equations.
  - a)  $\begin{cases} 2x - 3y = 3 \\ x + y = 9 \end{cases}$
  - b)  $\begin{cases} x + 3y = 11 \\ x - 2y = -9 \end{cases}$
  - c)  $\begin{cases} 3x - y = 15 \\ 2x + y = 10 \end{cases}$

12. The following are word problems can be solved by setting up and solving a system of linear equations.
- a) There is an animal farm where chickens and cows live. All together, there are 72 heads and 200 legs. How many chickens and cows live on the farm?
  - b) Ann and Betsy are talking about how much money they have. Betsy says: "I think that you should give me five dollars because then we would have the same amount of money." Ann answers: "Maybe you should give me five dollars so that I would end up having exactly twice as much money as you would!" How much money do they have?