

1. Write the list of topics you want to review.
2. There are 20 students in a class, each with a different first name (there are no students with the same first name). They are all very good at math, so they decided to randomly choose a team of three to go to the math Olympiad. What is the probability that Robert, John, and Mary will be on the same team?

3. Which fraction is bigger,  $\frac{29}{73}$  or  $\frac{291}{731}$ ?

4. Simplify the following expressions (use the distributive property, combine like terms):

a.  $5(a + 2) - 12$ ;      b.  $2(m - n) - (m + n)$ ;      c.  $3(b - 1) - 2(b - 2)$ ;  
 d.  $9 - 2(-c + 4)$ ;      e.  $(x - y) - 2(x + y)$ ;      f.  $-2(d + 3) + 3(2 - d)$ ;  
 g.  $m - 3(2 - m) + 8$ ;      h.  $-2(a + b) + 2(a - b)$ ;      i.  $5y - 2(y - 1) + 3(-y - 4)$

5. Solve the equations. Remember, there is absolute value in this equations.

Example:

$$|6 - x| = 4;$$

$$6 - x = 4; \qquad \qquad \qquad 6 - x = -4$$

$$6 - 4 = x; \qquad \qquad \qquad 6 + 4 = x$$

$$x = 2; \qquad \qquad \qquad x = 10$$

$$\text{check: } |6 - 2| = |4| = 4; \quad |6 - 10| = |-4| = 4$$

a.  $|a - 4| = 1$ ;      b.  $|b - 2| = 3$ ;      c.  $|c + 1| = 2$ ;      d.  $|d + 3| = 4$

6. ABCD is a trapezoid. Draw the altitude (segment, perpendicular to bases), measure bases and altitude, calculate the area of a trapezoid.

7. What is the length of a diagonal of rectangle with sides 3 cm and 6 cm? Represent the answer as a square root of a number, then estimate the value as a decimal with one digit after the point. Draw the rectangle, measure the diagonal, compare with your calculations.





