A(-6,-3), B(-4,2), C(1,-2)

Part B: Use the distance formula or the Pythagorean Theorem to find the length of each side of triangle *ABC*. Show substituted values in equation for full credit. $d=\sqrt{(x_2-x_1)^2+(y_2-y_1)^2}$ Round to the nearest hundredth.

AB = $\sqrt{(-4+6)^2+(2+3)^2} = \sqrt{(2)^2+(5)^2} = \sqrt{4+25} = \sqrt{29} \approx 5.39$

BC = $\sqrt{(1+4)^2+(-2-2)^2} = \sqrt{(5)^2+(-4)^2} = \sqrt{25+16} = \sqrt{41} \approx 6.4$

AC = $\sqrt{(1+6)^2+(-2+3)^2} = \sqrt{(7)^2+(1)^2} = \sqrt{49+1} = \sqrt{50} \approx 7.07$

Part C: Classify the triangle, state whether the triangle is isosceles, scalene, or equilateral. Draw a conclusion based on your results above.

ΔABC is scalene because all 3 sides are different lengths.

Part D: Map ΔABC to $\Delta A'B'C'$ by the translation $(x,y) \rightarrow (x+4, y+5)$. Find the coordinates of *A'*, *B'* and *C'* and plot them on the grid.

A(-6,-3) → A'(-2,2) B(-4,2) → B'(0,7)

C(1,-2) → C'(5,3)

Part E: Do your conclusions about ΔABC still hold for $\Delta A'B'C'$? Why or Why not?

Yes, the triangle was only translated. The size did not change.