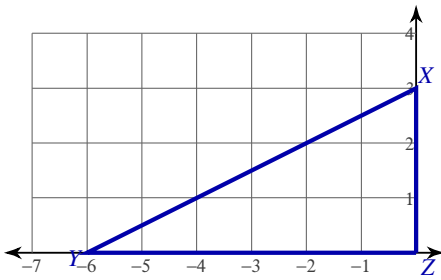


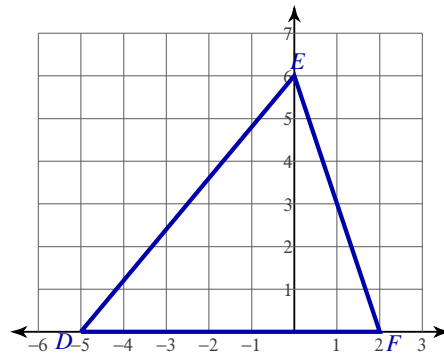
Coordinate Geometry and the Centroid

Find coordinates of the centroid of each triangle.

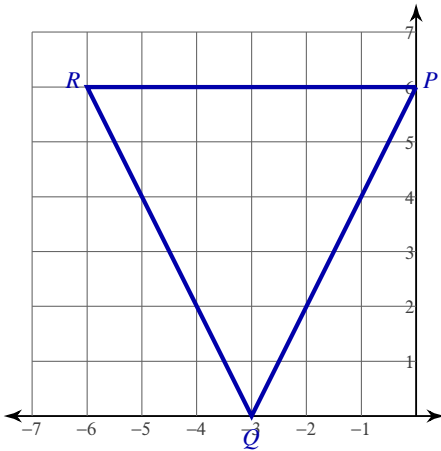
1)



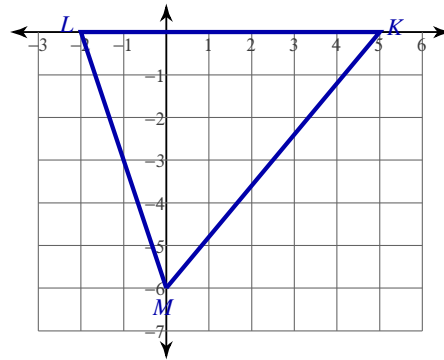
2)



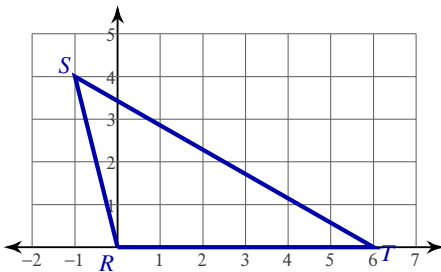
3)



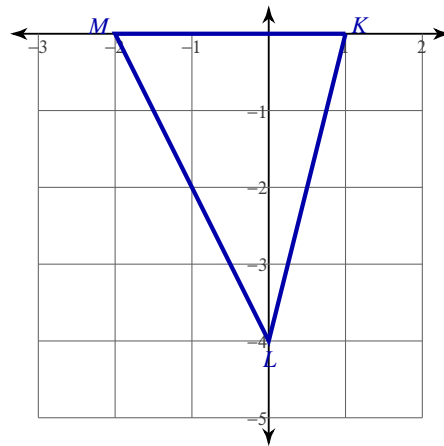
4)



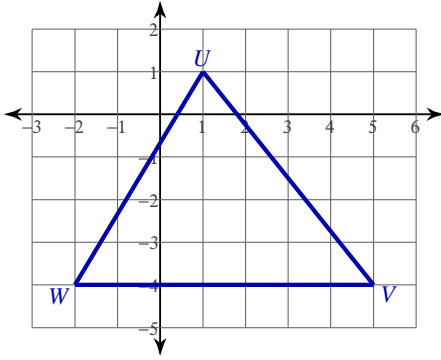
5)



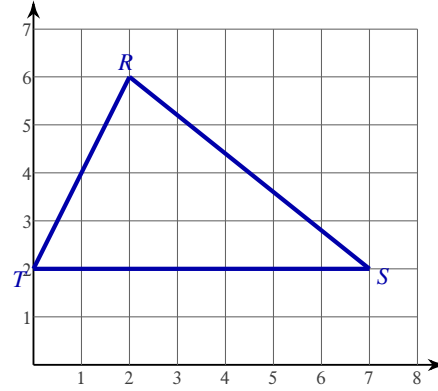
6)



7)



8)



**Find the coordinates of the centroid of each triangle given the three vertices.**

9)  $C(-7, -6)$ ,  $B(-8, 0)$ ,  $A(0, 0)$

10)  $S(0, -6)$ ,  $R(-10, -6)$ ,  $Q(1, 0)$

11)  $T(0, 0)$ ,  $U(1, 3)$ ,  $V(-2, 0)$

12)  $Y(3, 4)$ ,  $X(-5, 0)$ ,  $W(0, 0)$

13)  $E(6, -3)$ ,  $D(-5, -3)$ ,  $C(6, -1)$

14)  $F(-7, -3)$ ,  $G(-7, -5)$ ,  $H(-3, -3)$

**Critical thinking questions:**

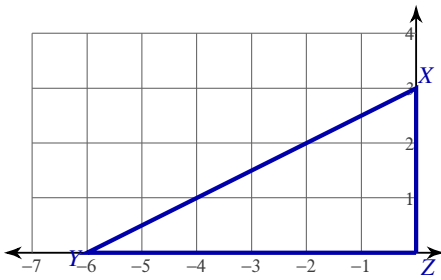
15) Two vertices of a triangle are  $(0, 0)$  and  $(9, 0)$ . The centroid is  $(6, 1)$ . Find the third vertex of the triangle.

16) For question #1, connect the midpoints of each side of the triangle to form a smaller triangle within the original triangle. Find the coordinates of the centroid of the smaller triangle. What happened and why?

Coordinate Geometry and the Centroid

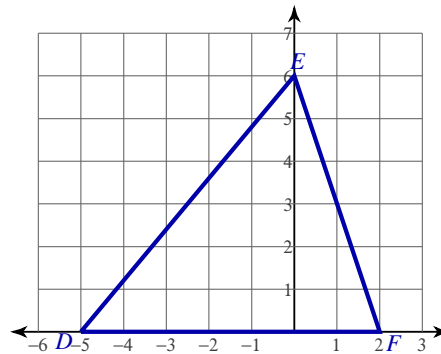
Find coordinates of the centroid of each triangle.

1)



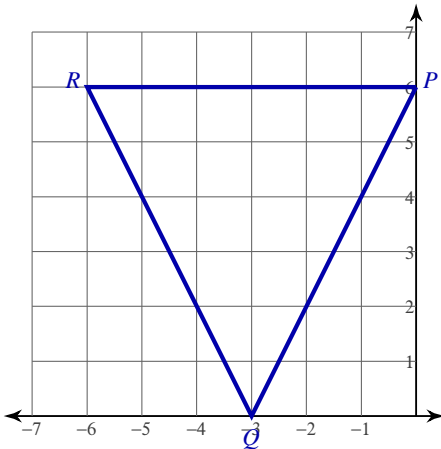
$(-2, 1)$

2)



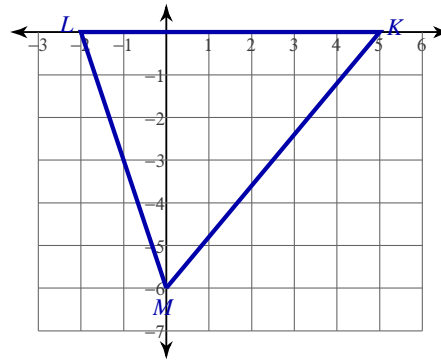
$(-1, 2)$

3)



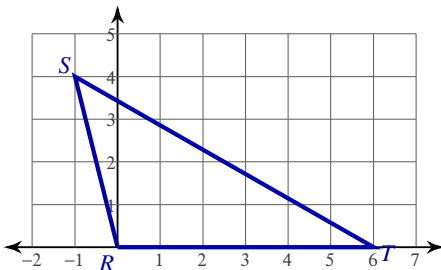
$(-3, 4)$

4)



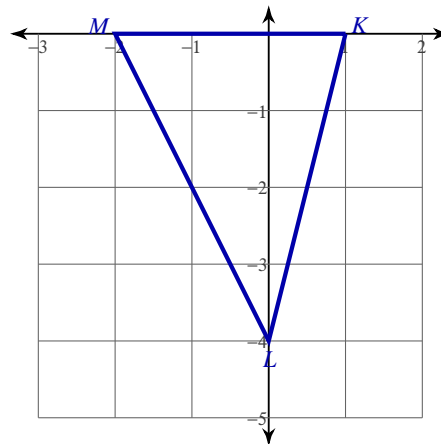
$(1, -2)$

5)



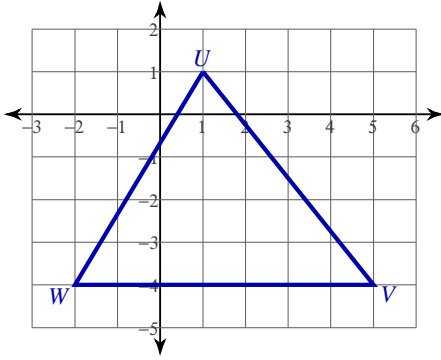
$(\frac{5}{3}, \frac{4}{3})$

6)



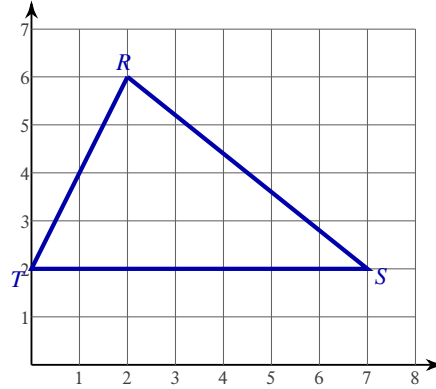
$(-\frac{1}{3}, -\frac{4}{3})$

7)



$$\left(\frac{4}{3}, -\frac{7}{3}\right)$$

8)



$$\left(3, \frac{10}{3}\right)$$

**Find the coordinates of the centroid of each triangle given the three vertices.**

9)  $C(-7, -6), B(-8, 0), A(0, 0)$

$$(-5, -2)$$

10)  $S(0, -6), R(-10, -6), Q(1, 0)$

$$(-3, -4)$$

11)  $T(0, 0), U(1, 3), V(-2, 0)$

$$\left(-\frac{1}{3}, 1\right)$$

12)  $Y(3, 4), X(-5, 0), W(0, 0)$

$$\left(-\frac{2}{3}, \frac{4}{3}\right)$$

13)  $E(6, -3), D(-5, -3), C(6, -1)$

$$\left(\frac{7}{3}, -\frac{7}{3}\right)$$

14)  $F(-7, -3), G(-7, -5), H(-3, -3)$

$$\left(-\frac{17}{3}, -\frac{11}{3}\right)$$

**Critical thinking questions:**

15) Two vertices of a triangle are  $(0, 0)$  and  $(9, 0)$ . The centroid is  $(6, 1)$ . Find the third vertex of the triangle.

$$(9, 3)$$

16) For question #1, connect the midpoints of each side of the triangle to form a smaller triangle within the original triangle. Find the coordinates of the centroid of the smaller triangle. What happened and why?

**Centroid stays the same. The medians don't change.**