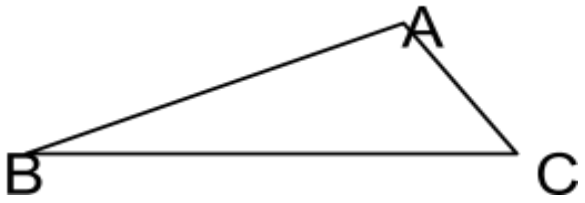
MTH1W

Midpoints and Medians in Triangles

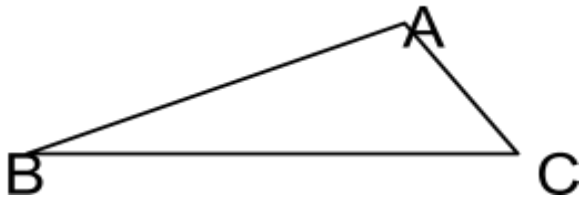
The **median** of a triangle connects one of its corners to the midpoint of the opposite side.

Each of the three medians divide the triangle's **area** in half.

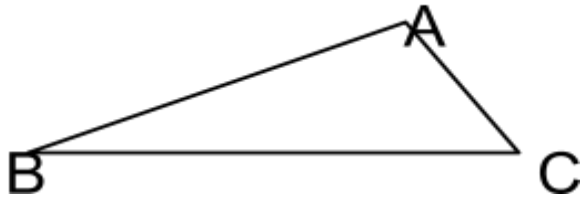
Draw the "median from A":



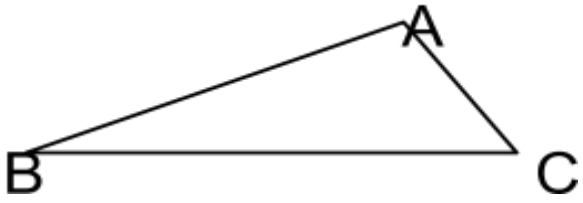
Draw the "median from B":



Draw the "median from C":



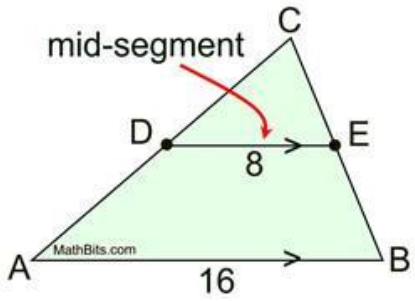
Draw all three medians. They meet at the **centroid**.



The **centroid** is the point where all three medians of a triangle meet. It is the 'balance point' of a triangle (aka the **centre of gravity**), where you would need to hold the triangle for it to balance perfectly.

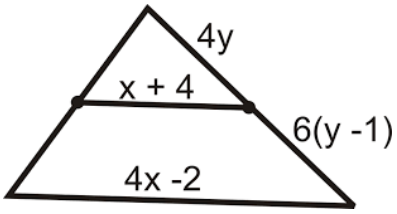
If you connect any two midpoints of two sides of a triangle, you'll get a **mid-segment**:

- The mid-segment will cut the height of the triangle in half
- The mid-segment will be half as long as the side it's parallel to.

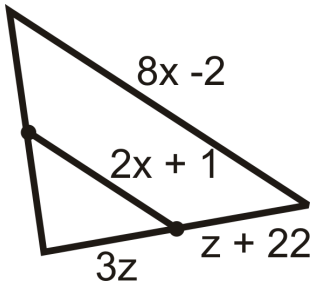


Practice and Homework

1. Solve for the values of *x* and *y* in the following triangle.

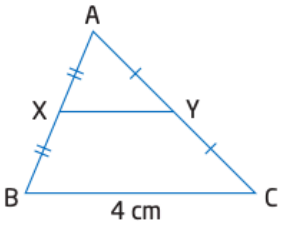


2. Solve for the values of *x* and *z* in this triangle.

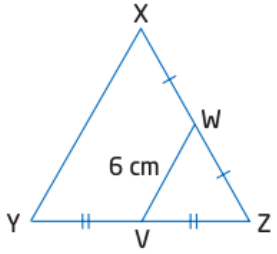


1. Calculate the length of line segment XY in each triangle.

a)



b)

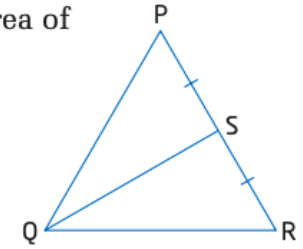


For help with questions 2 and 3, see Example 2.

2. The area of △PQR is 16 cm^2. Calculate the area of

a) △PQS

b) △QSR



3. The area of △XYZ is 19 cm^2. Calculate the area of

a) △WZY

b) △WXY