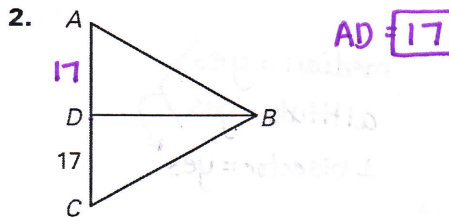
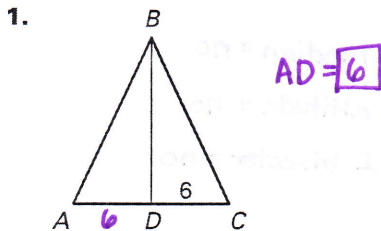


Practice - Median & Centroid

\overline{BD} is a median of $\triangle ABC$. Find the length of \overline{AD} .



Use the graph shown.

3. Find the coordinates of D , the midpoint of \overline{AB} .

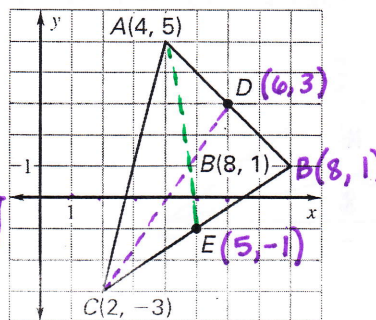
$\boxed{(6, 3)}$

4. Find the length of the median \overline{CD} .

$d = \sqrt{(6-2)^2 + (3+3)^2} = \sqrt{16+36} = \sqrt{52} = \boxed{2\sqrt{13}}$

5. Find the coordinates of E , the midpoint of \overline{BC} .

$\boxed{(5, -1)}$



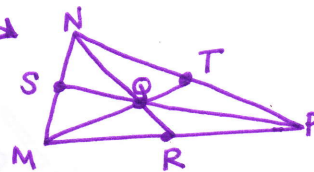
6. Find the length of the median \overline{AE} .

$d = \sqrt{(4-5)^2 + (5-(-1))^2} = \sqrt{1+36} = \boxed{\sqrt{37}}$

Complete the statement for $\triangle MNP$ with medians \overline{MT} , \overline{NR} , and \overline{PS} , and centroid Q .

7. $QR = \underline{\frac{1}{3}} NR$

8. $MQ = \underline{\frac{2}{3}} MT$



S is the centroid of $\triangle RTW$, $RS = 4$, $VW = 6$, and $TV = 9$. Find the length of the segment.

9. $\overline{RV} = 6$

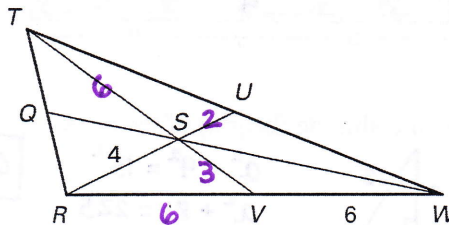
10. $\overline{SU} = 2$

11. $\overline{RU} = 6$

12. $\overline{RW} = 12$

13. $\overline{TS} = 6$

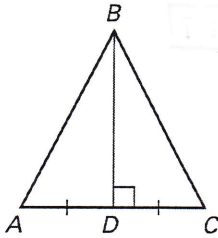
14. $\overline{SV} = 3$



(Median & Centroid) **Practice** *continued*

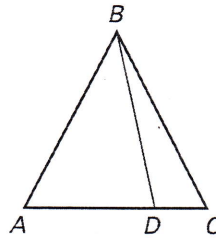
Is \overline{BD} a median of $\triangle ABC$? Is \overline{BD} an altitude? Is \overline{BD} a perpendicular bisector?

15.



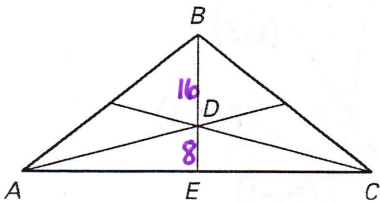
median = yes
altitude = yes
⊥ bisector = yes

16.



median = no
altitude = no
⊥ bisector = no

17. **Error Analysis** D is the centroid of $\triangle ABC$. Your friend wants to find DE . The median \overline{BE} has length 24. Describe and correct the error. Explain your reasoning.



$$DE = \frac{2}{3}BE \quad DE = \frac{1}{3}BE$$

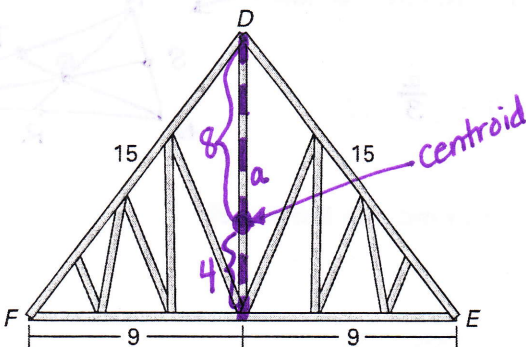
$$DE = \frac{2}{3}(24) \quad DE = \frac{1}{3}(24)$$

$$DE = 16 \quad DE = 8$$

↑
This work was finding BD .

In Exercises 18 and 19, use the following information.

Roof Trusses Some roofs are built using several triangular wooden trusses.



18. Find the altitude (height) of the truss.



$$a^2 + 9^2 = 15^2$$

$$a^2 + 81 = 225$$

$$a^2 = 144$$

$$a = 12$$

19. How far down from D is the centroid of $\triangle DEF$?

$$\frac{2}{3}(12) = 8$$