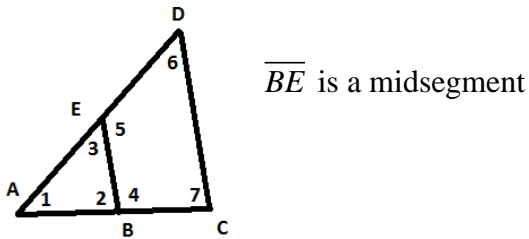


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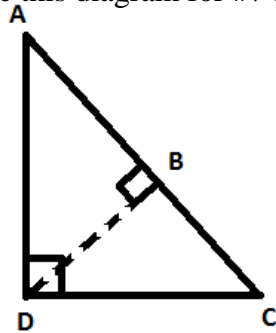
Geometry
 Unit 4
 Problem Set

- 1) [3] A _____ connects 2 midpoints of 2 sides of a triangle and is ____ of the length of the opposite side as well as being _____ to the opposite side.
- 2) [1] The _____ is the geometric mean between the 2 parts of the hypotenuse.
- 3) [2] The _____ is the geometric mean between the entire hypotenuse and the _____.
- 4) [2] If 2 similar triangles have a scale factor of 2:5 what is the ratio of their perimeters and what is the ratio of the areas?



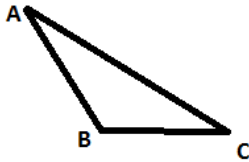
- 5) [3] $AE = 4x - 1$, $AD = 6x + 4$, and $CD = 7x + 3$ find BE
- 6) [3] Using the diagram from #5 if $m\angle 6 = 7x - 7$ and $m\angle 5 = 10x$, find and explain $m\angle 3$

Use this diagram for #7 and #8



- 7) If $AD = 14$ and $AC = 24.5$, find DB
- 8) If $DC = 6$ and $AD = 8$ find AB

Use the following diagram for #9 and 10



$\triangle ABC \sim \triangle DEF$ with SF = 2:5

9) [3] If $AC = 2x - 4$ and $DF = 4x - 1$, find the length of both sides.



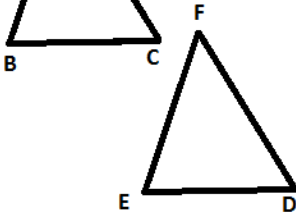
10) [5] If $AC = 6x - 1$, $EF = 10x - 10$, and $BC = x^2 - 2x + 1$ find DF .



$\triangle ABC \cong \triangle FDE$

Use this diagram for #11 through 13

11) [3] If the perimeter of $\triangle ABC$ is 55, $FD = x - 2$, $DE = x + 3$, and $FE = 2x - 10$, find all 3 sides of $\triangle FDE$



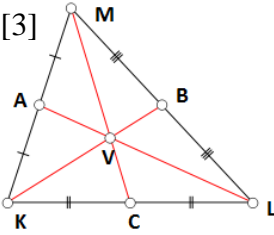
12) [3] $AB = 4x - 2$, $FE = 6x - 1$, and $FD = 3x + 5$, find AC .

13) [2] In #13 what would be a range of possible values for ED in $\triangle FDE$?

14) [3] If 2 similar triangles have a scale factor of 3:8, perimeter of the smaller triangle is represented by $x + 12$, and the perimeter of the larger triangle is represented by $6x - 18$, what is the difference in the perimeters of these triangles?

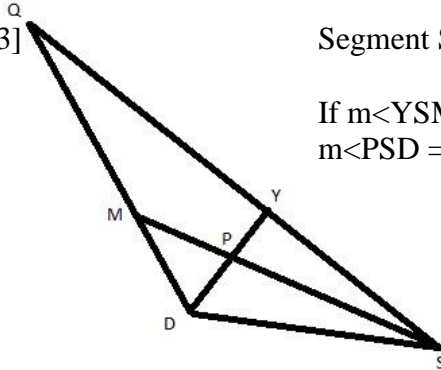
15) [4] If 2 similar triangles have a scale factor of 3:8 and the area of the larger triangle is represented by $140x + 14$ and the area of the smaller triangle is represented by $23x - 3$, what percent larger is the area of the larger triangle than the smaller triangle?

16) [3]



If $MV = 3x + 9$, and $VC = x^2 - x - 8$ find MC

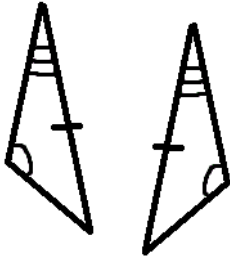
17) [3]



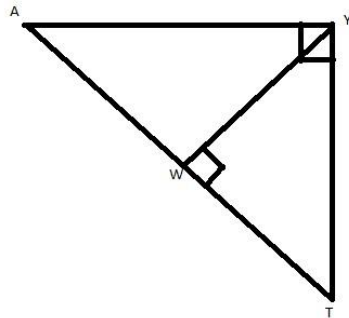
Segment SM and segment DY are both angle bisectors.

If $m\angle YSM = 2x - 3$, $m\angle YDS = 7x - 5$, and $m\angle PSD = 3x - 12$, find $m\angle DQS$.

18) [2] Why are these two triangles congruent?



19)



If $TW = 2x + 1$, $AW = x$, and $WY = x + 2$, find WY (WY must be more than 3).