

Name: _____

Date: _____

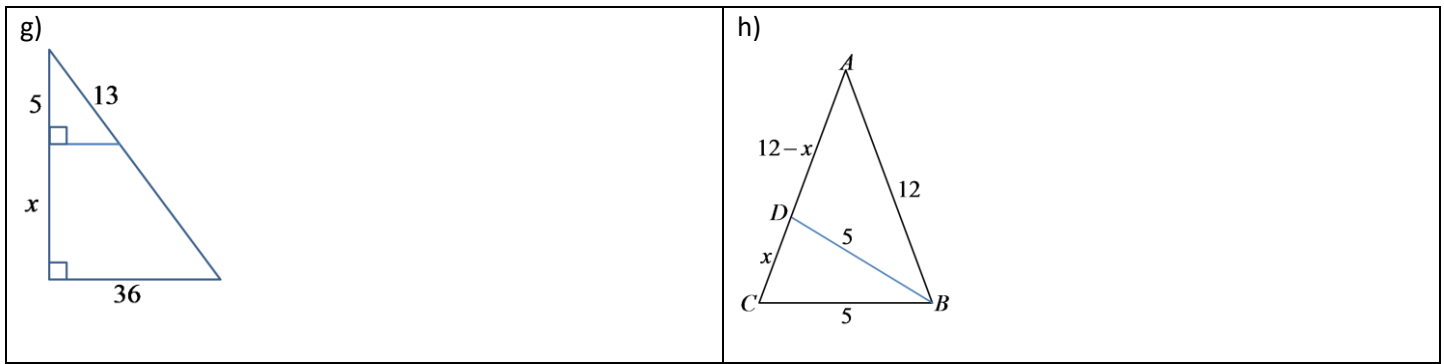
Math 8 Enriched: 5.4 Similar Triangles Part 1

1. Given that each pair of triangles are similar, indicate which side in the second triangle corresponds with side "x"?

<p>a) $\triangle ABC \sim \triangle FDE$</p> <p>$x =$</p>	<p>b) $\triangle FOG \sim \triangle NEW$</p> <p>$x =$</p>	<p>c) $\triangle MON \sim \triangle POQ$</p> <p>$x =$</p>
<p>d) $\triangle FIJ \sim \triangle HGF$</p> <p>$x =$</p>	<p>e) $\triangle TYW \sim \triangle TUV$</p> <p>$x =$</p>	<p>f) $\triangle TAC \sim \triangle DOG$</p> <p>$x =$</p>

2. Given that following pairs of similar triangles, find the length of the missing side "x".

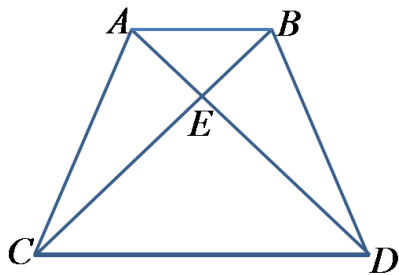
<p>a)</p>	<p>b)</p>
<p>c)</p>	<p>d)</p>
<p>e)</p>	<p>f)</p>



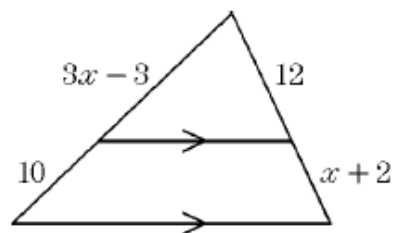
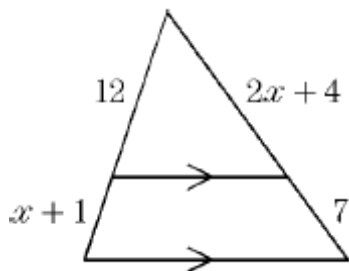
3. Indicate whether if the following statements are true OR false: Explain why.

- | | |
|---|---------------|
| i) If two triangles are similar they have the same shape | TRUE FALSE |
| ii) If two triangles are similar, they have the same size | TRUE FALSE |
| iii) All equilateral triangles are similar | TRUE FALSE |
| iv) All isosceles triangles are similar | TRUE FALSE |
| v) All isosceles right triangles are similar | TRUE FALSE |
| vi) All right triangles are similar | TRUE FALSE |
| vii) All squares are similar | TRUE FALSE |

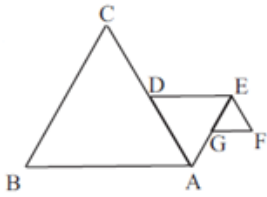
4. Given the following isosceles trapezoid, indicate all the pairs of similar triangles.



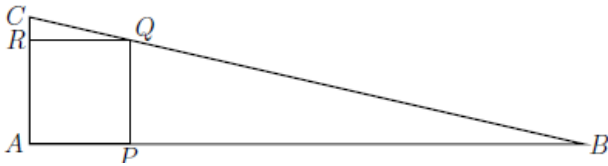
5. Solve for the value of "x"



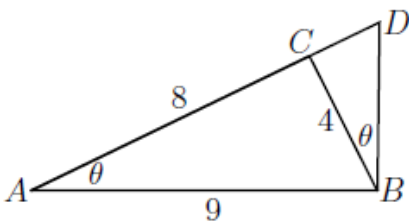
6. Triangle ABC, ADE, and EFG are all equilateral. Points D and G are midpoints of AC and AE, respectively. If $AB=4$, what is the perimeter of figure ABCDEFG?



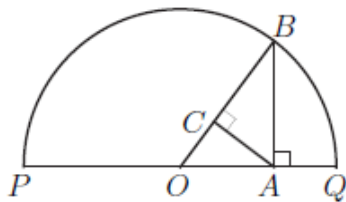
2. In the picture below, ABC is right-angled at A, P lies on AB, Q lies on BC, R lies on CA, and APQR is a square. The length of AB is 24 and the length of AC is 5. What is the length of AP? Write the answer as a common fraction.



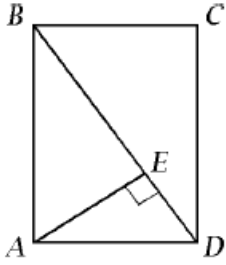
3. Triangle ABC has $AB=9$, $AC=8$, and $BC=4$. Line segment AC is extended to D in such a way that $\angle CBD = \angle CAB$. What is the length of the line segment CD? Express your answer as a common fraction.



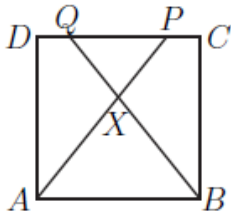
4. The figure below is a half-circle with centre O. Given that $PA = 13$ and $AQ = 3$, what is then length of OC? Express your answer as a common fraction.



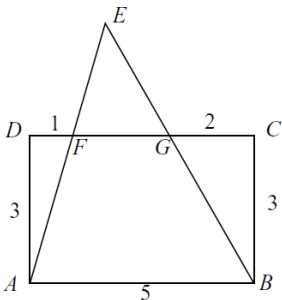
5. In rectangle ABCD, E lies on \overline{BD} , with segments $\overline{AE} \perp \overline{BD}$, $AE = 4$ and $AD = 5$. Find BD . Express your answer as a fraction in lowest terms.



6. In the picture below (which is not drawn to scale), ABCD is a square of side 1 unit, and P and Q are on the line segment CD, with $CP = DQ < 0.5$. Lines AP and BQ intersect at X. Given that triangle ABX has area $\frac{2}{7}$ units², what is the area of quadrilateral BCPX? Express your answer as a common fraction.



7. In rectangle ABCD, $AB=5$ and $BC=3$. Points F and G are on CD so that $DF=1$ and $GC=2$. Lines AF and BG intersect at E. Find the area of AEB.



8. In the Picture below, which is not drawn to scale, ABC is right-angled at C. The two legs AC and BC have length 40 and 60. The shaded region consists of all points *inside* ABC which are at a distance less than or equal to 6 from one (or both) of the two legs of ABC. What is the area of the shaded region?

