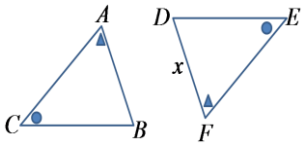
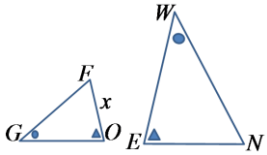
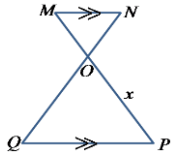
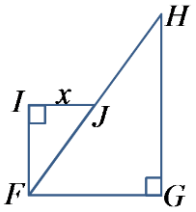
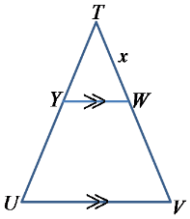
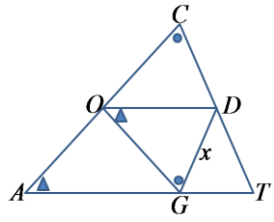
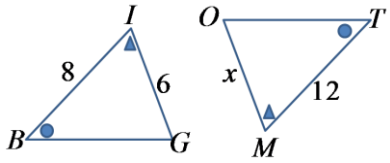
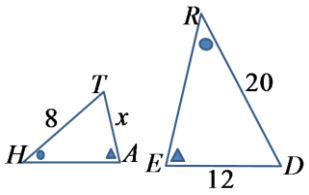
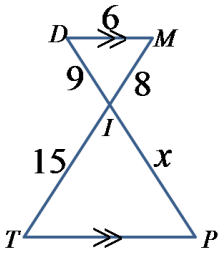
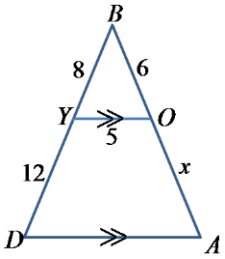
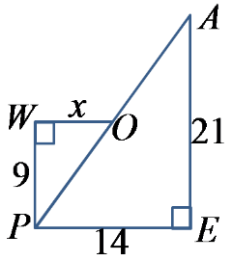
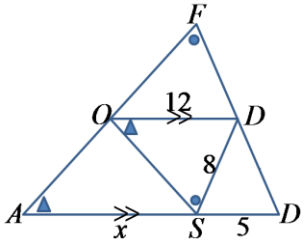
Name:_____ Date:_____

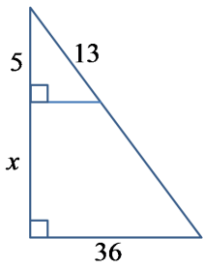
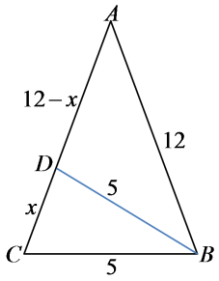
Math 8 Enriched: 5.4 Similiar Triangles Part 1

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

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

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

a) 	b) 
c) 	d) 
e) 	f) 

g)	h)
	

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

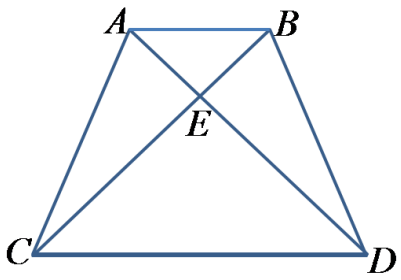
iv) All isosceles triangles are similar TRUE FALSE

v) All isosceles right triangles are similar TRUE FALSE

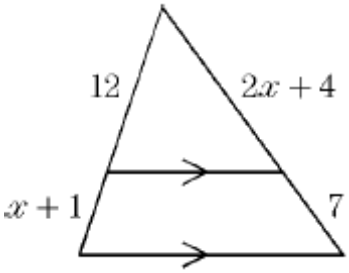
vi) All right triangles are similar TRUE FALSE

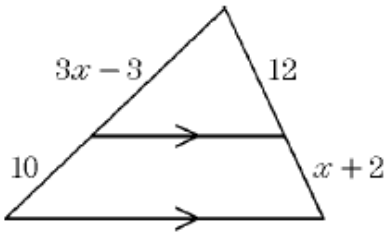
vii) All squares are similar TRUE FALSE

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

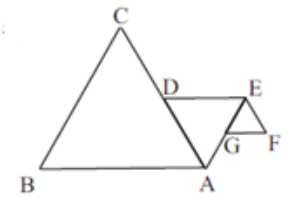


5. Solve for the value of "x"

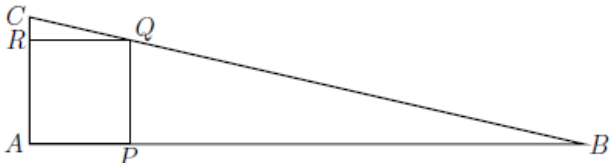




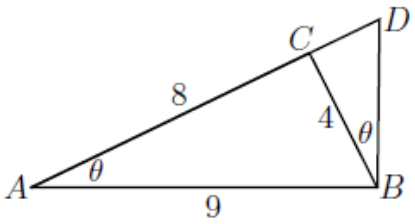
6. Triangle ABC, ADE, and EFG are all equilateral. Points D and G are midpoints of AC and AE, respectively. If AB=4, what is the perimeter of figure ABCDEFG?



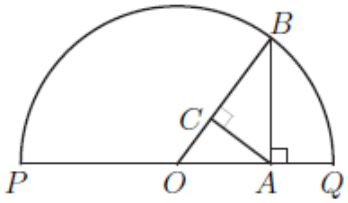
2. In the picture below, ABC is right-angled at A, P lies on AB, Q lies on BC, R lies on CA, and APQR is a square. The length of AB is 24 and the length of AC is 5. What is the length of AP? Write the answer as a common fraction.



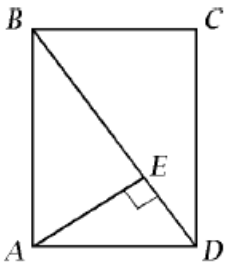
3. Triangle ABC has AB=9, AC=8, and BC=4. Line segment AC is extended to D in such a way that angleCBD = angleCAB. What is the length of the line segment CD? Express your answer as a common fraction.



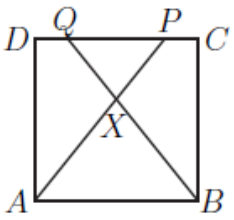
4. The figure below is a half-circle with centre O. Given that PA = 13 and AQ = 3, what is then length of OC? Express your answer as a common fraction.



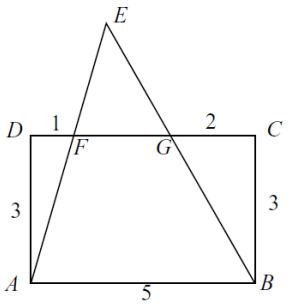
5.In rectangle ABCD, E lies on $\overline{BD}$, with segments $\overline{AE} \perp \overline{BD}$, $AE = 4$ and $AD = 5$. Find BD. Express your answer as a fraction in lowest terms.



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 $\frac{2}{7}$ units^2, 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?