

## Review 3!

1. As explained in class, what 3 things have to be the same in order for 2 triangles to be similar? Draw (a)  $\triangle ABC$  is similar to  $\triangle XYZ$  and (b)  $\triangle ABC$  similar to  $\triangle YZX$  (a total of 4 triangles).
2. In both triangles above, suppose  $AB = 5$ ,  $BC = 6$ , and  $AC = 9$  with  $XY = x$  and  $YZ = 2$ . Using number 1, find  $x$  in part (a) and (b).
3. Draw Right  $\triangle ABC$  with  $AC$  as the hypotenuse. Suppose  $AB = 3$ ,  $AC = 5$ , find  $BC$ . In the same triangle, label  $\alpha$  and  $\beta$  where  $\tan \alpha = \frac{3}{4}$
4. Draw 30-60-90  $\triangle VAN$  with hypotenuse  $VN = \sqrt{10}$ , labeling all the sides, with appropriate lengths. Now draw an isosceles right triangle with the same vertices and same hypotenuse. Meaning, draw a 45-45-90 triangle with hypotenuse  $VN = \sqrt{10}$  and find all other sides.
5. What's the difference between sine and cosine? For what angle are they the same? In a right triangle  $\triangle ABC$  with  $AB$  as the hypotenuse, illustrate why  $\cos A = \sin B$ .
6. In a 30-60-90 right  $\triangle HEY$  with hypotenuse  $EH = 10$ , for the angle of 30 find sin, cos, tan. Then find csc, sec, cot of 30.
7. If  $\cot \theta = \frac{24}{7}$ , find all 5 other trig functions for  $\theta$