

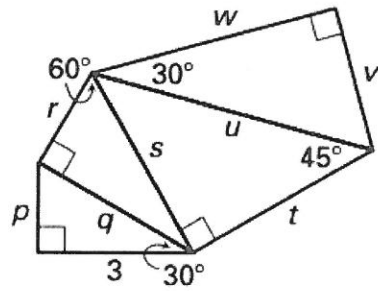
Name: \_\_\_\_\_

Period: \_\_\_\_\_

### 9.7 Solving Right Triangles Challenge Problems

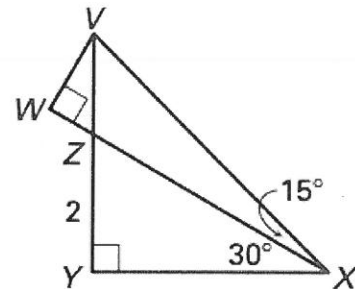
Directions: All answers should be exact except if noted otherwise.

1. Refer to the diagram. Find the exact values of  $p$ ,  $q$ ,  $r$ ,  $s$ ,  $t$ ,  $u$ ,  $v$ , and  $w$ .

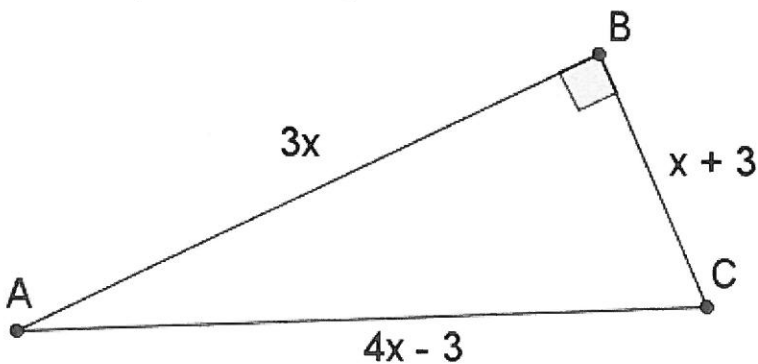


2. Let  $YZ = 2$ . Complete the following steps to find the side lengths of  $\triangle VWX$ , a  $15^\circ$ - $75^\circ$ - $90^\circ$  triangle.

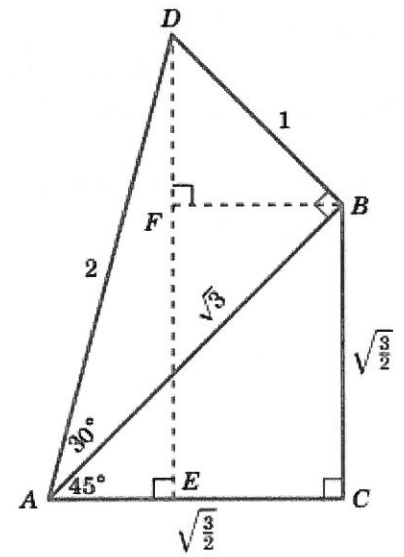
- Find  $XY$ ,  $VY$ , and  $VZ$ .
- What kind of special right triangle is  $\triangle VWZ$ ? Find the lengths of the sides of  $\triangle VWZ$ .
- Find the lengths of the sides of  $\triangle VWX$ .



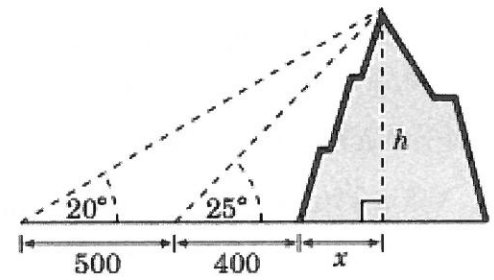
3. Find the perimeter of triangle ABC.



4. Find the  $\tan(75^\circ)$  as an exact answer using the picture on the right.



5. Find the height of the mountain.



6. Solve all three triangles.

