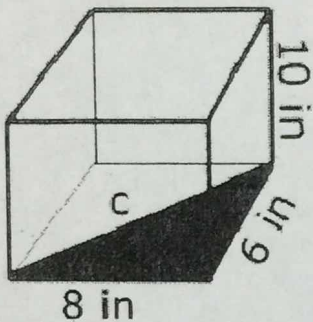


Finding the lengths of the diagonal of a prism

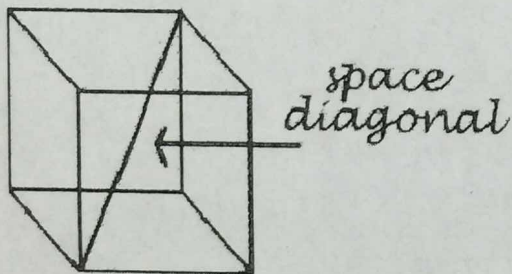
1. Find the length of the diagonal "c" of the base of the prism.

Hint: Which two measurements will we use? _____ and _____

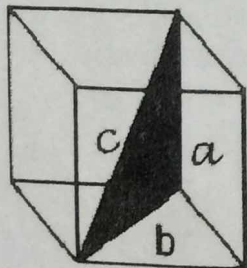
Which is extra information? _____



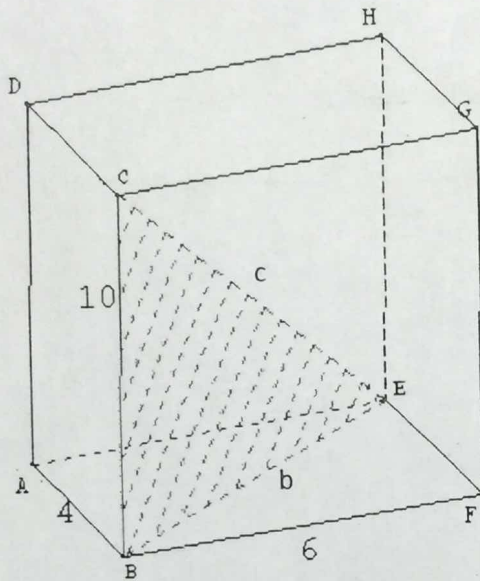
In a rectangular prism, a **space diagonal** is a line that goes from a vertex of the prism, through the center of the prism to the opposite vertex. That line is also called triangular or volume diagonal



The Pythagorean theorem is useful when we need to find the length of a **space diagonal** in a rectangular prism. To find the length of "c" in the picture below, we would first need to find "b" which is the diagonal of the base of the prism. We would find "b" like we did in problem #1 above.

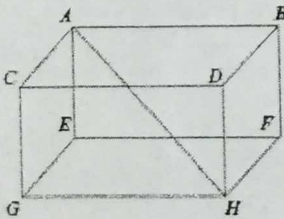


2. Using the picture below, find the length of the diagonal of the base "b" and then use that value to find the length of the space diagonal "c".

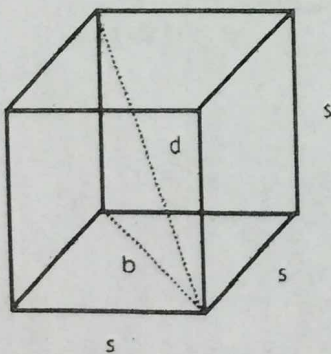


Use the picture below to solve 3 and 4:

3. If the length of GH is 12 inches and the length of EG is 9 inches, find the length of the diagonal of the base EH. _____
4. Use the length of AE as 4 inches and the length of EH found above to find the length of AH. _____



5. Using the picture below find the length of b and d if $s = 10$ inches.



$b =$ _____

$d =$ _____