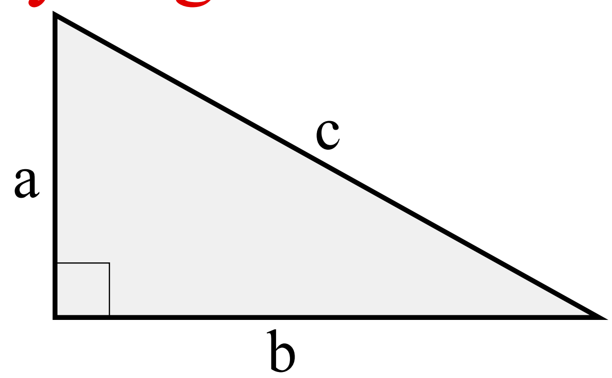
II. Examples (p.438): Problems #~~**2**,4,10,14~~,16

III. Pythagorean Theorem (p.435):



$$\underline{\mathbf{a^2}} + \underline{\mathbf{b^2}} = \underline{\mathbf{c^2}}$$

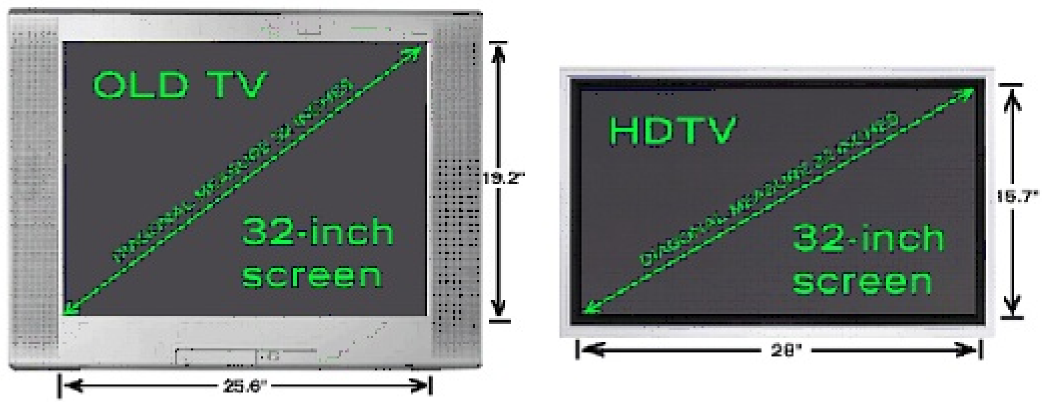
IV. Example (p.438): Problems #~~18,**20**~~,tv-screen*

V. Application Example (p.440): Problem #28

HW: pp.438-440 / Problems #~~1,7,9,11,13,15,17,19,~~
25,27,31,37,41

*Show that the screen-size of each of the two following televisions is 32″.

Use the dimensions (width & height) for each tv as shown in the illustration...



TOTAL AREA 25.6 x 19.2 = 491.52 square inches TOTAL AREA 28 x 15.7 = 439.6 square inches

As we can see in the example above, the "old" 32-inch TV has 491.52 square inches of screen area, and the 32-inch HDTV has 439.6 square inches — in other words, less. When comparing an "old" TV and HDTV of the same diagonal screen size, the HDTV screen is actually 11 percent smaller. This is true whether comparing 32-, 42, 50- or 60-inch screens: A 60-inch HDTV screen is 11 percent smaller than your old 60-inch non-HD projection screen. To make sure your HDTV has the same screen area as your old TV, it needs to have a diagonal measure ("screen size") that's six percent bigger. (Why not 11 percent? The math involves logarithms and square roots — i.e. Pythagorean geometry, not simple multiplication. Trust us on this.) In other words **take the diagonal screen size of the old TV and multiply by 1.06**. If you have a 32-inch regular TV, this means the HDTV needs a 34-inch screen if you don't want your new TV picture to be smaller than the old one (32 times 1.06 equals 34). But this is not the whole story, especially when it comes to watching "old" TV shows on your new HDTV.