

Math 2 Unit 2 Test – Similar Triangles & Right Triangle Trigonometry

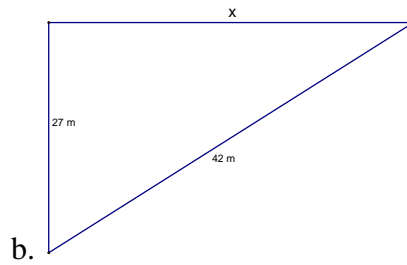
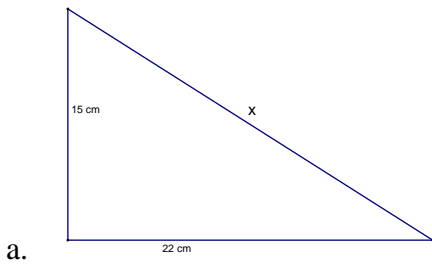
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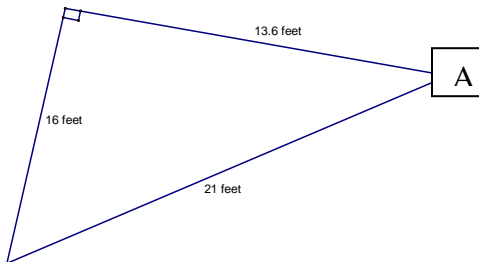
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1. A 40-foot flagpole casts a 25-foot shadow. Find the shadow cast by a nearby building 200 feet tall. (draw a diagram and solve) **(4M)**

2. Solve for the unknown side. Round your final answer to ONE decimal place. **(4 M)**

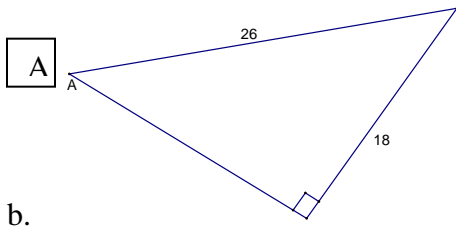
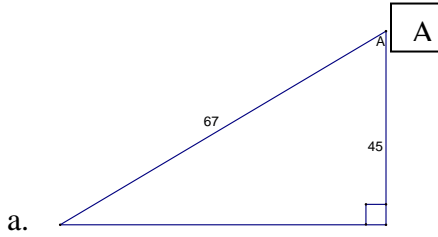


3. Given the following right triangle, state the value of the trigonometric RATIOS (sine ratio, cosine ratio, tangent ratio) for angle A. Leave all answers in non-reduced fraction form. **(3 M)**

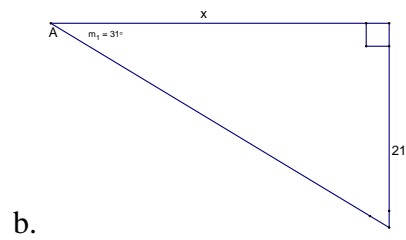
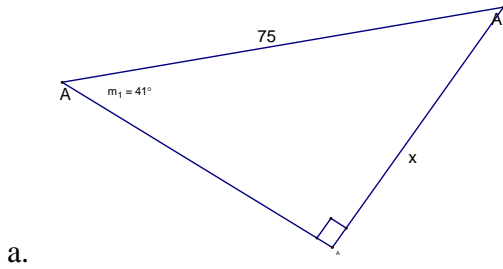


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4. For the given triangles, solve for angle A. Round your final answer to ONE decimal place. **(6 M)**

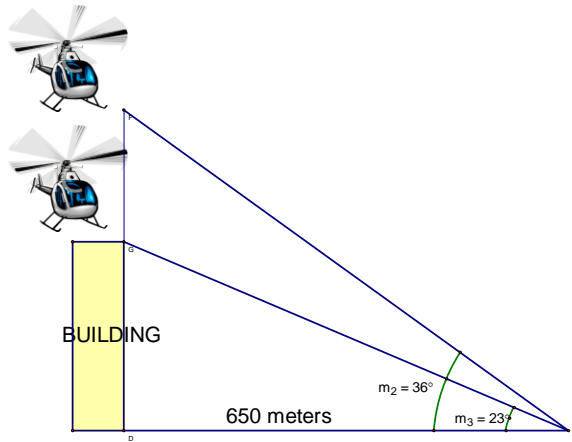


5. For the given triangles, solve for the unknown side (labeled as x on the diagrams). Round your final answer to ONE decimal place. **(6 M)**



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6. From a point 650 meters from the base of a building, a helicopter is observed that the angle of elevation of 23° . aThe helicopter rises directly upward and the angle of elevation is now 36° . **(6M)**
- Find the height of the building, to the *nearest meter*.
 - Find the height to the helicopter at its highest point, to the *nearest meter*.
 - Using your answers from (a) and (b), find the height risen by the helicopter to the *nearest meter*.



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7. Santa is beginning to make his Christmas plans. So he needs to know some angles and distances (in addition to whether you've been naughty or nice ... but that's another story for another test!) So help Santa, by finding: **(9M)**
- The distance between Nikki's and Zach's houses.
 - The distance between Arlan & Zach's houses.
 - How far must Santa travel if he wants to visit all three and get back to the North pole?
 - What is the angle between Nikki's house and Arlan's house (angle NNA)

