

Name _____ BOY Basic Skills and Triangle Diagnostic Date _____ Hour _____

This is a basic algebra skills and a triangle diagnostic. Its goals are to determine that you can in fact use SOHCAHTOA, properties of triangles, and the Pythagorean Theorem. There is also a section that tests your basic skills with fractions and radicals. The figures are not drawn to scale, unless presented on a grid.

1	4	9	16	25	36	49	64	81	100
121	144	169	196	225	256	289	324	361	400
441	484	529	576	625	676	729	784	841	900

Completely simplify each of the following radical expressions (YOU MUST SHOW AT LEAST ONE STEP IN PROCESS)

1. $\sqrt{1200}$

2. $10\sqrt{999}$

3. $\sqrt{8} + 3\sqrt{50}$

4. $5\sqrt{6}(2\sqrt{12} - 10\sqrt{18})$

5. $\frac{\sqrt{75}}{\sqrt{98}}$

6. $\frac{10}{\sqrt{7}}$

7. $\frac{\sqrt{30} - 3\sqrt{15}}{4\sqrt{3}}$

8. $\frac{4\sqrt{10} - 8}{5 + 2\sqrt{3}}$

Completely simplify each of the following rational expressions (YOU MUST SHOW AT LEAST ONE STEP IN PROCESS)

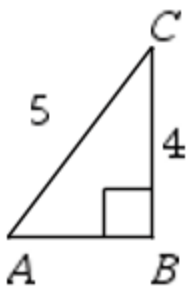
9. $\frac{1}{4} + \frac{3}{x}$

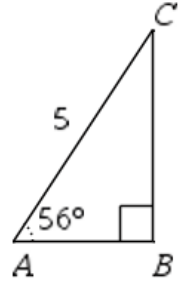
10. $\frac{w}{4x} + \frac{3}{2x}$

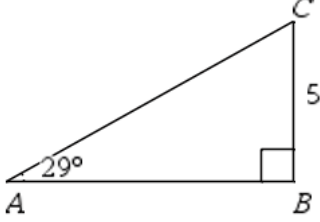
11. $\frac{5}{10x} - \frac{w}{8y}$

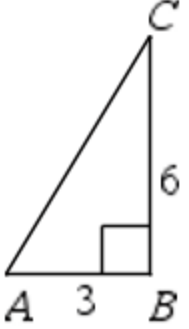
12. $\frac{6}{x} - \frac{w}{x^2 + 2x}$

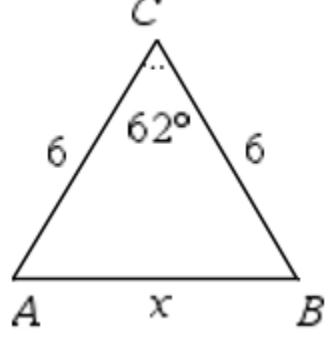
Solve each of the triangles. Show the necessary steps to find each missing triangle part

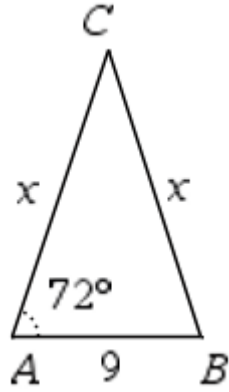
 <p>13. Show work to find angle C</p>	<p>14. Show work to find side AB</p>
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 <p>15. Show work to find side BC</p>	<p>16. Show work to find side AB</p>
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 <p>17. Show work to find side AC</p>	<p>18. Show work to find side AB</p>
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 <p>19. Show work to find angle C</p>	<p>20. Show work to find side AC</p>
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 <p>21. Determine the value of x</p>

 <p>22. Determine the value of x</p>
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