Algebra 3 Assignment # 19

(1) Solve each of the following triangles please. Express all sides and angles correct to two decimal places. Find the area of each triangle.

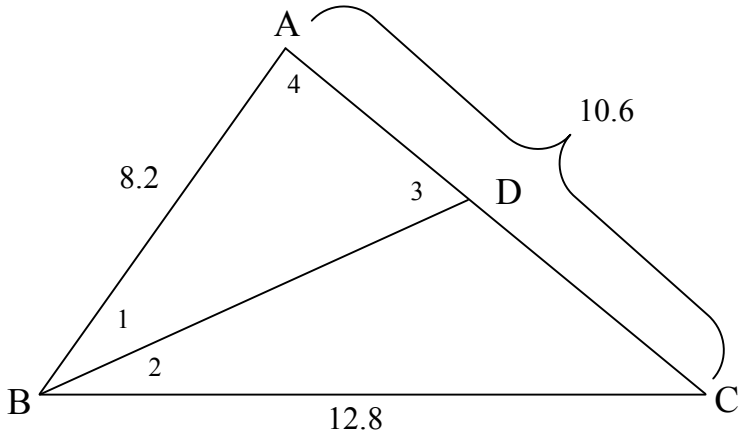
(a) $a = 2.6$, $b = 3.1$, $c = 4.3$

(b) $a = 14$, $c = 8.1$, $\beta = 58.2°$

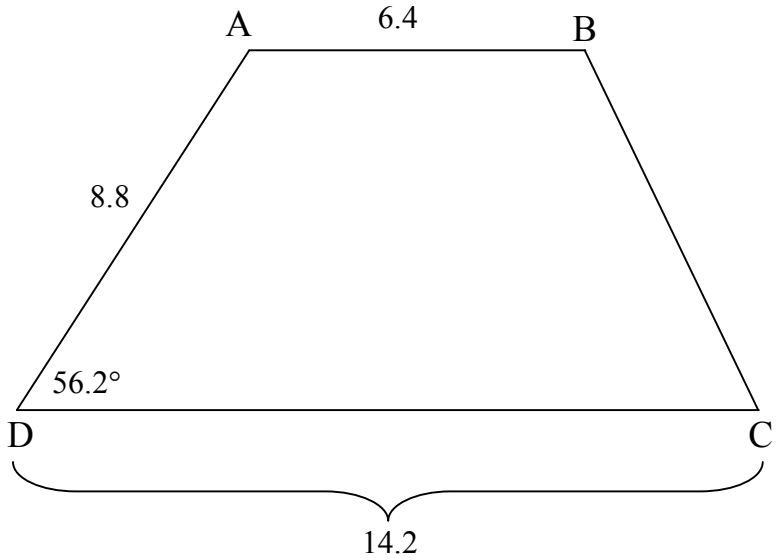
(c) $\alpha = 51°$, $c = 18$, $a = 25$

(d) $b = 7$, $c = 9$, $\beta = 35°$

(2) Given the figure below, $\angle 1 \cong \angle 2$, with sides as marked. Find: AD , BD , $m\angle 1$, $m\angle 3$ and $m\angle 4$.



(3) Given the figure below, $\square ABCD$ is a trapezoid with $\overline{AB} \parallel \overline{CD}$ and with sides and angle as marked. Find: AC , BD , BC , and $m\angle C$.



(4) Sketch a graph of the lines $y = 2x - 1$ and $y = x + 1$ on the same axis. Find the measure of the acute angle formed at the point of intersection of the lines.

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Answers

(1) **(a)** $\alpha = 36.82°$, $\beta = 45.62°$, $\gamma = 97.56°$, area = 3.99

(b) $\alpha = 86.52°$, $\gamma = 35.28°$, b = 11.92 , area = 48.19

(c) $\beta = 94.98°$, $\gamma = 34.02°$, b = 32.05 , area = 224.15

(d) $\alpha = 97.48°$, $\gamma = 47.52°$, a = 12.10 , area = 31.23

or

$\alpha = 12.52°$, $\gamma = 132.48°$, a = 2.65 , area = 6.83

(2) AD = 4.14 , BD = 8.84 , $m\angle 1 = 27.78°$, $m\angle 3 = 67.42°$, $m\angle 4 = 84.8°$

(3) AC = 11.83 , BD = 13.46 , BC = 7.87 , $m\angle C = 68.33°$

(4) 18.43°