

Tutorial 2 (Part 3)

Q1

Law of Sines: ASA, SSA

Law of Cosine: SSS, SAS

Q2

a) 25.4313 b) 40.3° c) 43.9° d) 114.8843

Q3

a) $\angle C = 114^\circ$
 $AC = 24.3352$
 $BC = 51.1820$

b) $\angle B = 50^\circ$
 $BC = 1.3054$
 $AB = 2.5712$

c) $\angle A = 44^\circ$
 $\angle B = 68^\circ$
 $BC = 8.9906$

d) $\angle B = 31.0^\circ$
 $\angle C = 69.0^\circ$
 $AB = 6.1619$

Q4

a) $\angle C = 47^\circ$
 $AC = 64.2434$
 $BC = 26.7126$

b) $\angle B = 85^\circ$
 $AB = 9.0977$
 $BC = 5.0191$

c) $\angle A = 60^\circ$
 $b = 21.2511$
 $a = 105.9846$

d) $C_1 = 53.4^\circ$
 $B_1 = 89.6^\circ$
 $b_1 = 49.8480$

$C_2 = 126.6^\circ$
 $B_2 = 16.4^\circ$
 $b_2 = 14.0745$

e) $\angle B_1 = 41.3^\circ$ $\angle B_2 = 138.7^\circ$
 $\angle A_1 = 100.7^\circ$ $\angle A_2 = 3.3^\circ$
 $a_1 = 67.0332$ $a_2 = 3.9270$

f) Cannot form a triangle.

Q5

$\angle BCD = \angle CBD = 25^\circ$
 $\angle BAC = 105^\circ$
 $AD = 5.2503$

Q6

a) $\angle ADC = 135.6^\circ$
 $\angle DCA = 14.4^\circ$
b) Area $DCA = 69.6332$

Q7 $\alpha = 38^\circ$
 $R = 174.6089$

Q8

a) 28.8810 b) 26.7557 c) 29.9° d) 111.0°

Q9

a) $C = \sqrt{604}$
 $\angle A = 39.4^\circ$
 $\angle B = 20.6^\circ$

b) $A = 63.6^\circ$
 $B = 15.5^\circ$
 $C = 101.5^\circ$

c) $\angle A = 49.9^\circ$
 $\angle B = 72.9^\circ$
 $\angle C = 57.2^\circ$

d) No triangle

Q10

a) 180
b) 19.9609

Q11

a) 40.8481
b) $4\sqrt{3} - 2\sqrt{5}$

Q12

a) 62.6175 mi
b) $S18.2^\circ E$