Precalc/Trig   Name_____ ID: 1
Law of Sines Ambiguous Case   Date_____ Period____

State the number of possible triangles that can be formed using the given measurements.

1) $m\angle A = 110°$, $c = 19$ cm, $a = 32$ cm

2) $m\angle A = 131°$, $a = 25$ yd, $c = 8$ yd

3) $m\angle B = 100°$, $a = 33$ km, $b = 29$ km

4) $m\angle B = 61°$, $a = 35$ mi, $b = 32$ mi

5) $m\angle A = 68°$, $c = 34$ yd, $a = 9$ yd

6) $m\angle A = 57°$, $c = 27$ m, $a = 25$ m

Solve each triangle. Round your answers to the nearest tenth.

7) $m\angle B = 27°$, $a = 28$ ft, $b = 18$ ft

8) $m\angle C = 54°$, $b = 24$ km, $c = 23$ km

9) $m\angle A = 32°$, $a = 17$ cm, $c = 5$ cm

10) $m\angle A = 52°$, $c = 29$ mi, $a = 27$ mi

11) $m\angle B = 135°$, $m\angle C = 6°$, $b = 27$ yd

12) $m\angle B = 34°$, $m\angle C = 53°$, $b = 14$ mi

13) $m\angle A = 47°$, $c = 34$ mi, $a = 33$ mi

14) $m\angle B = 12°$, $m\angle C = 16°$, $a = 34$ km

15) $m\angle B = 24°$, $m\angle C = 40°$, $b = 19$ km

16) $m\angle B = 64°$, $a = 34$ ft, $b = 33$ ft

Name_____ ID: 1

Law of Sines Ambiguous Case

Date_____ Period____

State the number of possible triangles that can be formed using the given measurements.

1) $m\angle A = 110°$, $c = 19$ cm, $a = 32$ cm

One triangle

2) $m\angle A = 131°$, $a = 25$ yd, $c = 8$ yd

One triangle

3) $m\angle B = 100°$, $a = 33$ km, $b = 29$ km

None

4) $m\angle B = 61°$, $a = 35$ mi, $b = 32$ mi

Two triangles

5) $m\angle A = 68°$, $c = 34$ yd, $a = 9$ yd

None

6) $m\angle A = 57°$, $c = 27$ m, $a = 25$ m

Two triangles

Solve each triangle. Round your answers to the nearest tenth.

7) $m\angle B = 27°$, $a = 28$ ft, $b = 18$ ft

$m\angle C = 108.1°$, $m\angle A = 44.9°$, $c = 37.7$ ft
Or $m\angle C = 17.9°$, $m\angle A = 135.1°$, $c = 12.2$ ft

8) $m\angle C = 54°$, $b = 24$ km, $c = 23$ km

$m\angle A = 68.4°$, $m\angle B = 57.6°$, $a = 26.4$ km
Or $m\angle A = 3.6°$, $m\angle B = 122.4°$, $a = 1.8$ km

9) $m\angle A = 32°$, $a = 17$ cm, $c = 5$ cm

$m\angle B = 139°$, $m\angle C = 9°$, $b = 21$ cm

10) $m\angle A = 52°$, $c = 29$ mi, $a = 27$ mi

$m\angle B = 70.2°$, $m\angle C = 57.8°$, $b = 32.2$ mi
Or $m\angle B = 5.8°$, $m\angle C = 122.2°$, $b = 3.5$ mi

11) $m\angle B = 135°$, $m\angle C = 6°$, $b = 27$ yd

$m\angle A = 39°$, $c = 4$ yd, $a = 24$ yd

12) $m\angle B = 34°$, $m\angle C = 53°$, $b = 14$ mi

$m\angle A = 93°$, $a = 25$ mi, $c = 20$ mi

13) $m\angle A = 47°$, $c = 34$ mi, $a = 33$ mi

$m\angle B = 84.1°$, $m\angle C = 48.9°$, $b = 44.9$ mi
Or $m\angle B = 1.9°$, $m\angle C = 131.1°$, $b = 1.5$ mi

14) $m\angle B = 12°$, $m\angle C = 16°$, $a = 34$ km

$m\angle A = 152°$, $c = 20$ km, $b = 15.1$ km

15) $m\angle B = 24°$, $m\angle C = 40°$, $b = 19$ km

$m\angle A = 116°$, $c = 30$ km, $a = 42$ km

16) $m\angle B = 64°$, $a = 34$ ft, $b = 33$ ft

$m\angle C = 48.2°$, $m\angle A = 67.8°$, $c = 27.4$ ft
Or $m\angle C = 3.8°$, $m\angle A = 112.2°$, $c = 2.4$ ft