$$\sin=\frac{opp}{hyp} \quad \cos=\frac{adj}{hyp} \quad \tan=\frac{opp}{adj} \qquad \frac{a}{\sin A}=\frac{b}{\sin B}=\frac{c}{\sin C} \qquad a^2=b^2+c^2-2bc\cos A \qquad \cos A=\frac{b^2+c^2-a^2}{2bc}$$
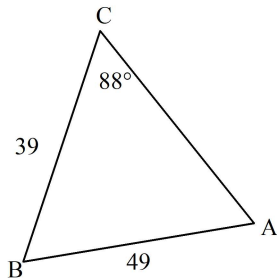
WS - Sine & Cosine Law

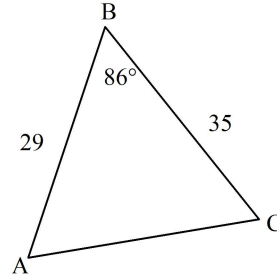1. Solve for side b using the sine law. Round your final answer to one decimal place.
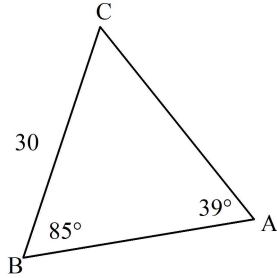
2. Solve for side b using the sine law. Round your final answer to one decimal place.
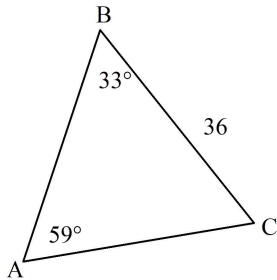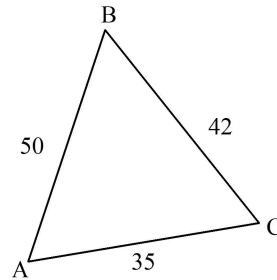

3. Solve for the angle A using the sine law. Round your final answer to one decimal place..
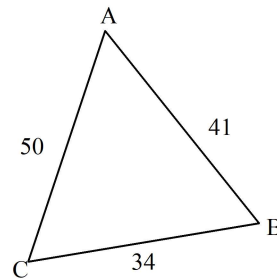

4. Solve for side b using the cosine law. Round your final answer to one decimal place..

5. Solve for angle A using the cosine law. Round your answer to one decimal place..
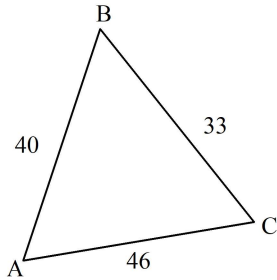

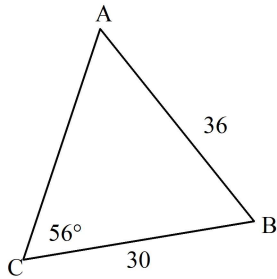6. Solve for angle A using the cosine law. Round your answer to one decimal place..

7. Solve for all unknown sides and angles. Round sides to one decimal place and angles to the nearest whole number.

```
        B
       /\
      /  \
   40/    \33
    /      \
   /        \C
  A----------
      46
```

8. Solve for all unknown sides and angles. Round sides to one decimal place and angles to the nearest whole number.

```
        A
       /|
      / |
     /  \36
    /    \
   /56°   \B
  C--------
     30
```

9. Solve for all unknown sides and angles. Round sides to one decimal place and angles to the nearest whole number.

```
        C
       /\
      /  \
   34/    \
    /   43°\A
   /54°----
  B
```

10. Solve for all unknown sides and angles. Round sides to one decimal place and angles to the nearest whole number.

```
        A
       /|
   58°/ |
     /  \
    /  34°\B
   C------
     33
```

11. Solve for all unknown sides and angles. Round sides to one decimal place and angles to the nearest whole number.

```
        B
       /|
    77°/ \42
   35/    \
    /      \C
   A--------
```

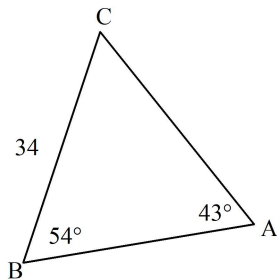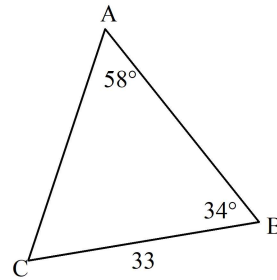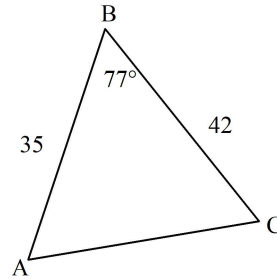12. Solve for all unknown sides and angles. Round sides to one decimal place and angles to the nearest whole number.

```
        B
       /|
    86°/ \39
   27/    \
    /      \C
   A--------
```

COMMUNICATION	No Level	0 1 2 3 4	5	6	7	8	9	10	
Conventions & Terminology	No level assigned based on	Unacceptable	Few Major / Many Minor Errors		Few Minor Errors		No Errors		**Page 2 of 2**
Expression & Organization	content of this page		Significant Improvements Required		Few Improvements Required		No Improvements Required		

WS - Sine & Cosine Law
Answer Section

1. ANS:

$$\frac{30}{\sin 39°} = \frac{b}{\sin 85°}$$

$$b = \frac{30(\sin 85°)}{\sin 39°}$$

$$b = 47.5$$

PTS: 1

2. ANS:

$$\frac{36}{\sin 59°} = \frac{b}{\sin 33°}$$

$$b = \frac{36(\sin 33°)}{\sin 59°}$$

$$b = 22.9$$

PTS: 1

3. ANS:

$$\frac{\sin A}{39} = \frac{\sin 88°}{49}$$

$$\sin A = \frac{39(\sin 88°)}{49}$$

$$A = \sin^{-1}\left(\frac{39(\sin 88°)}{49}\right)$$

$$A = 52.7°$$

PTS: 1

4. ANS:

$$b^2 = 35^2 + 29^2 - 2(35)(29)\cos 86°$$

$$b = 43.9$$

PTS: 1

COMMUNICATION	No Level	0 1 2 3 4	5	6	7	8	9	10
Conventions & Terminology	No level assigned based on content of this page	Unacceptable	Few Major / Many Minor Errors		Few Minor Errors		No Errors	
Expression & Organization			Significant Improvements Required		Few Improvements Required		No Improvements Required	

Page 1 of 3

5. ANS:

$$\cos A = \frac{35^2 + 50^2 - 42^2}{2(35)(50)}$$

$$A = \cos^{-1}\left(\frac{35^2 + 50^2 - 42^2}{2(35)(50)}\right)$$

$$A = 55.9°$$

PTS: 1

6. ANS:

$$\cos A = \frac{50^2 + 41^2 - 34^2}{2(50)(41)}$$

$$A = \cos^{-1}\left(\frac{50^2 + 41^2 - 34^2}{2(50)(41)}\right)$$

$$A = 42.5°$$

PTS: 1

7. ANS:

$$\cos A = \frac{46^2 + 40^2 - 33^2}{2(46)(40)}$$

$$A = \cos^{-1}\left(\frac{46^2 + 40^2 - 33^2}{2(46)(40)}\right)$$

$$A = 44.5°$$

PTS: 1

8. ANS:

$$\frac{\sin A}{30} = \frac{\sin 56°}{36}$$

$$\sin A = \frac{30(\sin 56°)}{36}$$

$$A = \sin^{-1}\left(\frac{30(\sin 56°)}{36}\right)$$

$$A = 43.5°$$

PTS: 1

COMMUNICATION	No Level	0 1 2 3 4	5	6	7	8	9	10
Conventions & Terminology	No level assigned based on content of this page	Unacceptable	Few Major / Many Minor Errors		Few Minor Errors		No Errors	
Expression & Organization			Significant Improvements Required		Few Improvements Required		No Improvements Required	

Page 2 of 3

9. ANS:

$$\frac{34}{\sin 43°} = \frac{b}{\sin 54°}$$

$$b = \frac{34(\sin 54°)}{\sin 43°}$$

$$b = 40.3$$

PTS: 1

10. ANS:

$$\frac{33}{\sin 58°} = \frac{b}{\sin 34°}$$

$$b = \frac{33(\sin 34°)}{\sin 58°}$$

$$b = 21.8$$

PTS: 1

11. ANS:

$$b^2 = 42^2 + 35^2 - 2(42)(35)\cos 77°$$

$$b = 48.2$$

PTS: 1

12. ANS:

$$b^2 = 39^2 + 27^2 - 2(39)(27)\cos 86°$$

$$b = 45.9$$

PTS: 1

COMMUNICATION	No Level	0 1 2 3 4	5	6	7	8	9	10
Conventions & Terminology	No level assigned based on content of this page	Unacceptable	Few Major / Many Minor Errors		Few Minor Errors		No Errors	
Expression & Organization			Significant Improvements Required		Few Improvements Required		No Improvements Required	

Page 3 of 3