

**Reflection and Self-Assessment****Completion:** Circle the statement that best describes the completion of this practice.

- I completed every question on the practice.
  - I did not complete some questions on the practice because:
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**Answer Checking:** Circle the statement that best describes how you checked your answers

- I checked all my answers against the key at the back and corrected any that were incorrect.
  - I did not check all my answers and correct any mistakes because:
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**Online Worked Solution:** Circle the statement that best describes how you used the online worked solutions.

- I did not use the online worked solution at all.
- I used the online solution to understand some questions I got incorrect.
- I used the online solution to help me learn how to answer some questions.

**Confidence:** Circle the statement that best describes your confidence in answering questions of this type in the future.

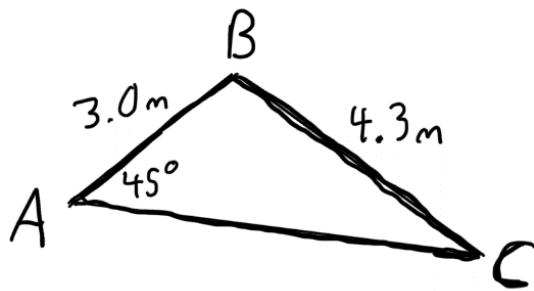
- I am confident I can answer nearly any question of this type correctly without using notes or other assistance.
- I am confident I can answer **MOST** questions of this type correctly without using notes or other assistance.
- I am **NOT** confident I can answer most questions of this type correctly without using notes or other assistance.

**Time:** Circle the statement below that best describes the total amount of time you spent actively working on this practice:

Less than an hour	Between one and two hours	Between two and three hours	Between three and four hours	More than four hours
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Use Sine Law to solve the following:

1.

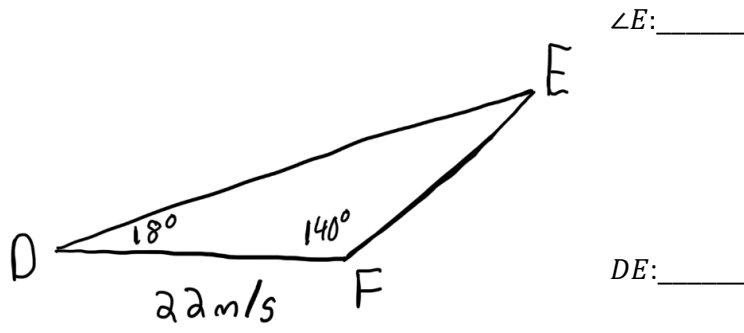


$\angle B$ : \_\_\_\_\_

$\angle C$ : \_\_\_\_\_

AC: \_\_\_\_\_

2.

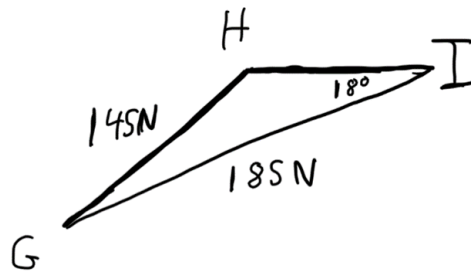


$\angle E$ : \_\_\_\_\_

$DE$ : \_\_\_\_\_

$EF$ : \_\_\_\_\_

3.



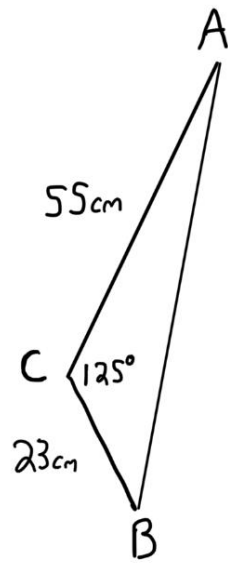
$\angle G$ : \_\_\_\_\_

$\angle H$ : \_\_\_\_\_

HI: \_\_\_\_\_

Use Cosine Law to solve the following:

4.

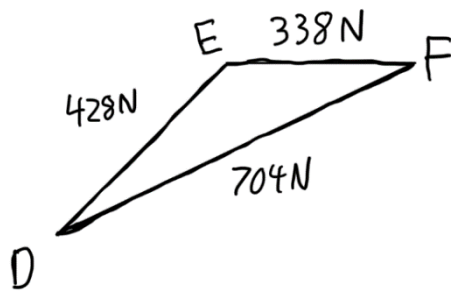


$\angle A$ : \_\_\_\_\_

$\angle B$ : \_\_\_\_\_

$AB$ : \_\_\_\_\_

5.

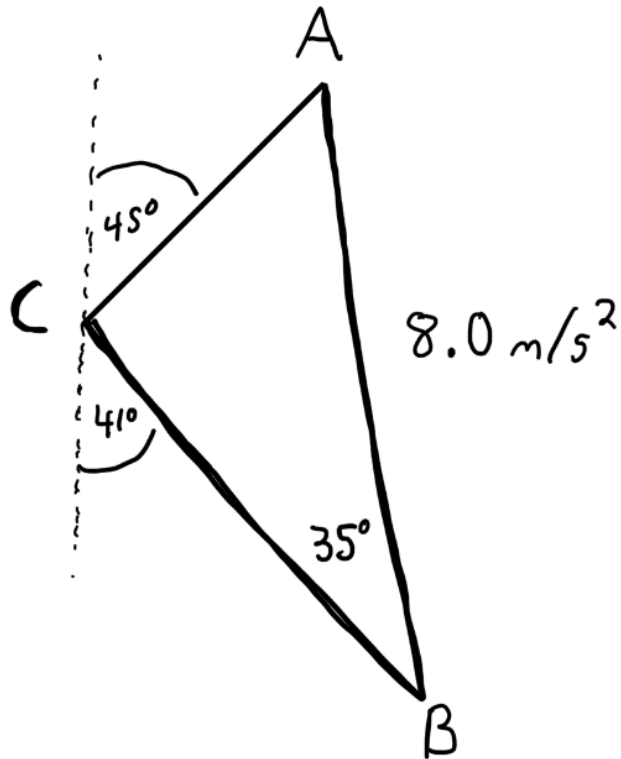


$\angle D$ : \_\_\_\_\_

$\angle E$ : \_\_\_\_\_

$\angle F$ : \_\_\_\_\_

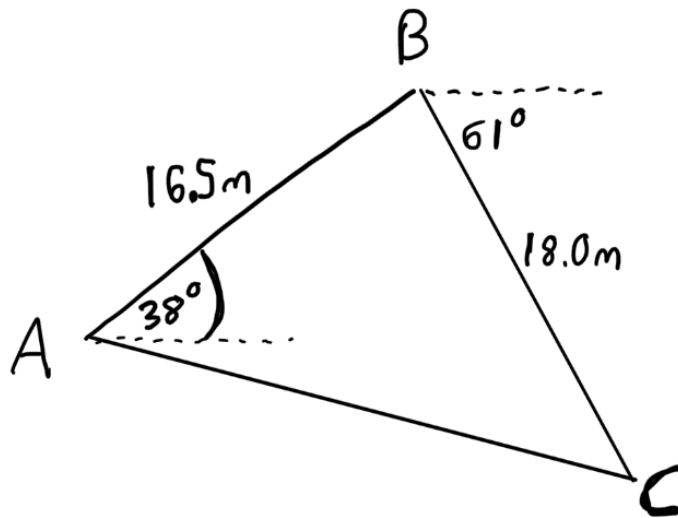
6. Solve the following triangle:

 $\angle A$ : \_\_\_\_\_ $\angle C$ : \_\_\_\_\_

AC: \_\_\_\_\_

BC: \_\_\_\_\_

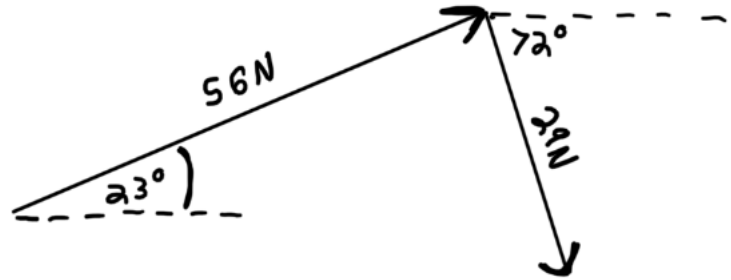
7. Solve the following triangle:

 $\angle A$ : \_\_\_\_\_ $\angle B$ : \_\_\_\_\_ $\angle C$ : \_\_\_\_\_

AC: \_\_\_\_\_



8. A force of 56 N,  $23^\circ$  above the horizontal and a force of 29 N,  $72^\circ$  below the horizontal are applied to an object. What is the net force acting on the object?



9. The net force acting on an object is 255 N,  $16^\circ$  North of East. There is a 220 N force acting  $19^\circ$  West of South and another force acting on the object. What is the magnitude (don't worry about direction) of the second force?

10. A plane is flying with airspeed of 216 m/s due East, a 30.0 m/s wind is blowing at  $28^\circ$  N of W.  
What is the resultant velocity of the plane (magnitude and direction)?

11. A plane with airspeed of 180m/s, pointed due North is deflected from its bearing by  $25^\circ$  to the East by a strong wind. Due to the wind the plane travels with a ground speed of 150 m/s. What is the speed and direction of the wind?

12. A boat which can travel at 3.3 m/s in calm water is attempting to cross an 85 m wide river which flows at 2.5m/s. It takes 28 seconds for the boat to cross the river, and when it reaches the other side is it is 65 m downstream. What direction was the boat pointed in?

<b>Answer Key</b>				
1) $\angle B = 105^\circ$ $\angle C = 30^\circ$ $\sim 3.0 \times 10^1 \text{ degrees}$ $AC = 5.9 \text{ m}$	2) $\angle E = 22^\circ$ $DE = 38 \text{ m/s}$ $EF = 18 \text{ m/s}$	3) $\angle G = 5.2^\circ$ $\angle H = 157^\circ$ $HI = 43 \text{ N}$	4) $\angle A = 15^\circ$ $\angle C = 40^\circ$ $\sim 4.0 \times 10^1 \text{ degrees}$ $AB = 71 \text{ cm}$	5) $\angle D = 20^\circ$ $\sim 2.0 \times 10^1 \text{ degrees}$ $\angle E = 133^\circ$ $\angle F = 26^\circ$
6) $\angle A = 51^\circ$ $\angle C = 94^\circ$ $AC = 4.6 \text{ m/s}^2$ $BC = 6.2 \text{ m/s}^2$	7) $\angle A = 52^\circ$ $\angle B = 81^\circ$ $\angle C = 47^\circ$ $AC = 22 \text{ m}$	8) 61 N, $5.4^\circ$ below the horizontal	9) 420 N	10) 190 m/s, $4.3^\circ$ North of East
11) Wind blows 77 m/s, $55^\circ$ East of South	12) $2.9^\circ$ upstream			