Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

UNIT 8 LESSON 4

|  |  |
| --- | --- |
| AIM: | SWBAT solve area problems with acute triangles |

**THINK ABOUT IT!**

Tiago and Angela are trying to find the area of the triangle below.



Tiago said that you can find the sum of the area of the two right triangles that make up the triangle and Angela thinks that you can simply use the area formula A = ½bh using a base of 11 ft. and a height of 4 ft.

Who is right? Try both methods!

Why is Tiago, Angela, or both of them correct?

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**Test the Conjecture**

*Test the Conjecture #1)* What is the area of the triangle below?



3.4 in.

* **CFS for top quality work**
  + Problem is annotated
  + Model is drawn accurately and labeled
  + Formula is written
  + All calculations are shown /Answer statement is provided

Conjecture

|  |
| --- |
| The area formula of a right triangle applies to \_\_\_\_\_\_\_\_ triangles |

**PARTNER PRACTICE**

|  |
| --- |
| *Bachelor Level* |

1. Find the area of each figure below in TWO different ways.

* **CFS for top quality work**
  + Problem is annotated
  + Model is drawn accurately and labeled
  + Formula is written
  + All calculations are shown /Answer statement is provided





* **CFS for top quality work**
  + Problem is annotated
  + Model is drawn accurately and labeled
  + Formula is written
  + All calculations are shown /Answer statement is provided

|  |
| --- |
| *Master Level* |

1. What is the area of the triangle below?



**INDEPENDENT PRACTICE**

|  |
| --- |
| *Bachelor Level* |

* **CFS for top quality work**
  + Problem is annotated
  + Model is drawn accurately and labeled
  + Formula is written
  + All calculations are shown /Answer statement is provided

1. Find the area of the triangle below.

8mm

*12 mm*

2. Find the area of the triangle below in TWO different ways.



* **CFS for top quality work**
  + Problem is annotated
  + Model is drawn accurately and labeled
  + Formula is written
  + All calculations are shown /Answer statement is provided

|  |
| --- |
| *Master Level* |

1. As part of a woodworking project, Le’ron made the triangular piece shown below. He painted the surface blue. How many square inches did he paint blue?

****

1. Which expressions can be used to find the area of the triangle below? Circle all that apply.

****

* 1. ½(9)(12) + ½(12.6)(12)
  2. ½(9)(15) + ½(12.6)(17.4)
  3. ½(9+12.6)(12)
  4. ½(21.6)(12)
  5. ½(9)(12 + 15)

What is the area of the triangle above?

1. Which triangles have an area of 64 inches?
   1. A right triangle with a height of 2 and a base of 32
   2. An acute triangle with a height of 8 and a base of 8
   3. A right triangle with a height of 8 and a base of 8
   4. An acute triangle with a height of 4 and a base of 8
2. Mr. Greenthumb is making two plots in his yard for his garden. One plot is a square and the other is an acute triangle. The triangle is 4 ft. by 8 ft. The square has the same area as the triangle. What is the length of one side of the square?

|  |
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| *PhD Level* |

1. Triangle ADE is inside rectangle ABCD. Point E is halfway between points B and C on the rectangle. Side AB is 8 cm and side AD is 7 cm. What is the area of triangle ADE? Show your work.

E

D

C

B

A

* **CFS for top quality work**
  + Problem is annotated
  + Model is drawn accurately and labeled
  + Formula is written
  + All calculations are shown /Answer statement is provided

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**EXIT TICKET**

|  |  |  |  |
| --- | --- | --- | --- |
| Self-assessment | I mastered the learning objective today. | I am almost there. | Need more practice and feedback. |
| Teacher feedback | You mastered the learning objective today. | You are almost there. | You need more practice and feedback. |

1. Find the area of the triangle below using **two** different methods. Show all work.

12 cm

7 cm

8 cm

3 cm