

Quantitative Methods

Unequal Triangles

Module No. Cons 1012

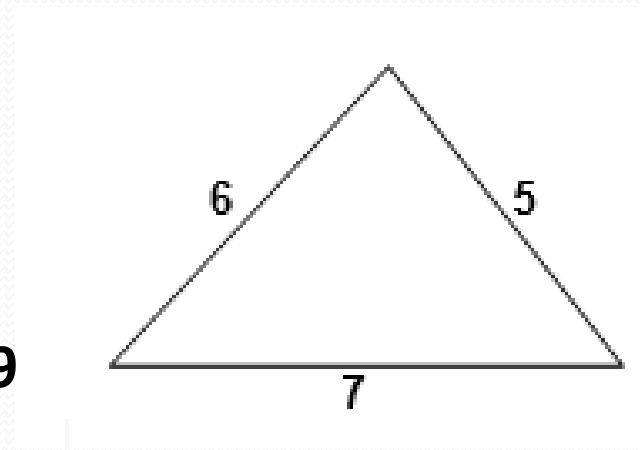
Lecturer Jennifer Byrne

Unequal Triangles

- Earlier we use the formula $\frac{1}{2}$ Base x Perp. Height to find the area of a triangle.
- What happens if the Perp. Height is unknown?
- **Area = $\sqrt{s(s-a)(s-b)(s-c)}$**
- **First we have to find S**

$$s = \frac{a + b + c}{2}$$

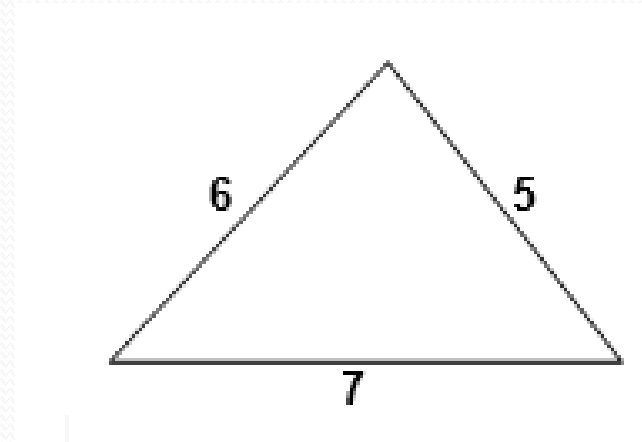
- **Using this triangle $s = 6+5+7 \div 2 = 9$**
- **S = 9**



Unequal Triangles

- **Area = $\sqrt{s(s-a)(s-b)(s-c)}$**
- First we have to find S
- Using triangle here $s = 6+5+7 \div 2 = 9$ $S = 9$
- Put in the value for S
- **Area = $\sqrt{9(9-a)(9-b)(9-c)}$**
- Put in the values for a, b & c
- **Area = $\sqrt{9(9-6)(9-5)(9-7)}$**
- **Area = $\sqrt{9(3)(4)(2)}$**
- **Area = $\sqrt{216}$**
- **Area = 14.69m^2**

$$s = \frac{a + b + c}{2}$$



$$\text{Q. 13 } 6+5+7= 18/2 =9 \quad \Rightarrow \quad \frac{\sqrt{9(3)(4)(2)}}{\sqrt{216}} = 14.697^2$$

Unequal Triangles

- **Area = $\sqrt{s(s-a)(s-b)(s-c)}$** **$s = \frac{a + b + c}{2}$**

- First we have to find S

$$s = \frac{a+b+c}{2} \quad s = \frac{6+7+8}{2} \quad s = \frac{21}{2} \quad s = 10.5$$

- Put in the value for S

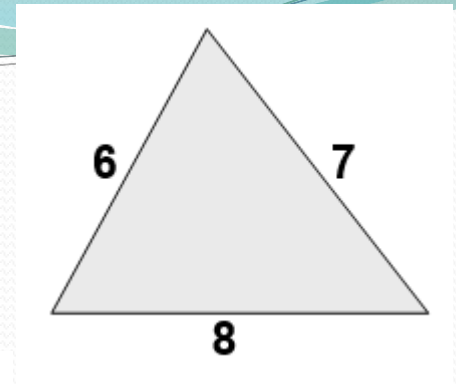
- Area = $\sqrt{10.5(10.5-6)(10.5-7)(10.5-8)}$

- Area = $\sqrt{10.5(4.5)(3.5)(2.5)}$

- Area = $\sqrt{413.43}$

- Area = 20.33m^2

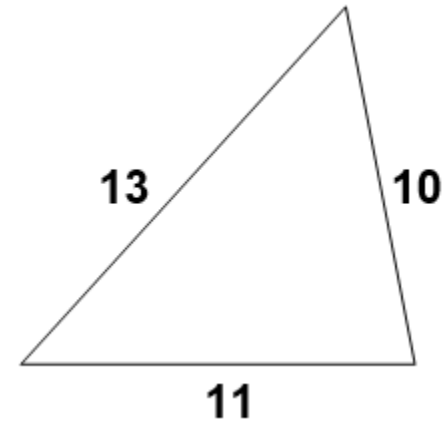
- Practice work sheet 1 Unequal Triangles



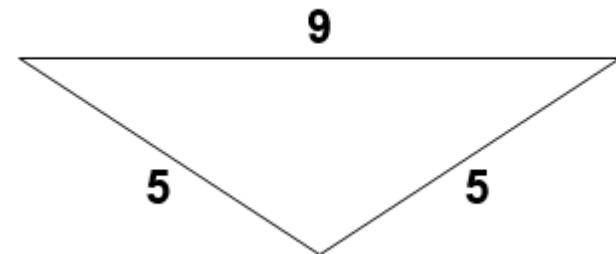
Unequal Triangles

- Area = $\sqrt{s(s-a)(s-b)(s-c)}$
- Q 6 from the sheet

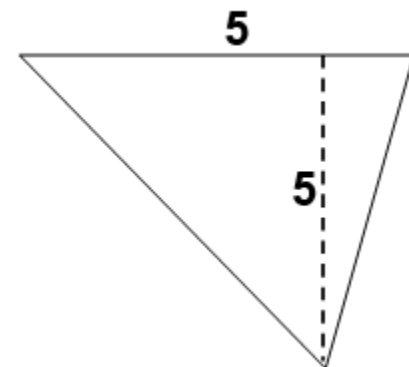
$$s = \frac{a + b + c}{2}$$



- Q 12 from the sheet



- Q 17 from the sheet



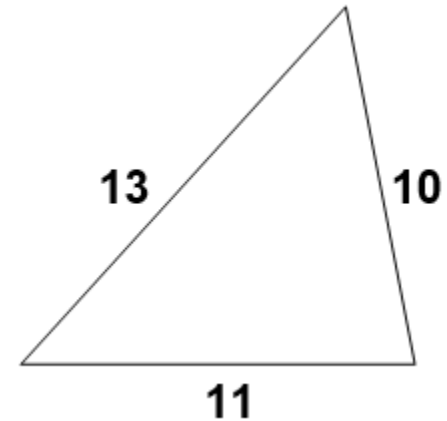
Unequal Triangles

- **Area = $\sqrt{s(s-a)(s-b)(s-c)}$**

$$s = \frac{a + b + c}{2}$$

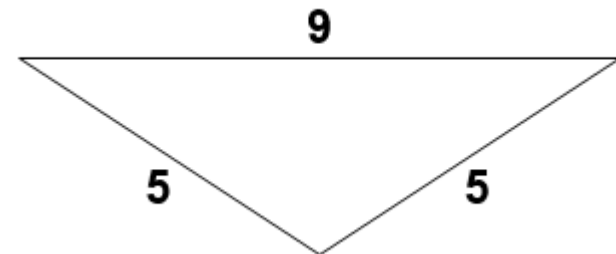
- Q 6 from the sheet

Q. 6 $13+10+11= 34/2 =17 \Rightarrow \sqrt{17(4)(7)(6)} = 53.442^2$
 $\sqrt{2856}$



- Q 12 from the sheet

Q. 12 $9+5+5= 19/2 =9.5 \Rightarrow \sqrt{9.5(0.5)(4.5)(4.5)} = 9.808^2$
 $\sqrt{96.1875}$



- Q 17 from the sheet

Q. 17 $\frac{1}{2} \times 5 \times 5 = 12.5^2$

