

# Math 111 - Trigonometry

## Homework Section 1.2 - Due 16th May

1. #26 on page 17.
2. #60 on page 20.
3. Suppose  $A_1B_1C_1$ ,  $A_2B_2C_2$ ,  $A_3B_3C_3$  are isosceles triangle:
  - (a) If  $A_1 = 100^\circ$  write down *all* the possible values of  $B_1$  and  $C_1$ .
  - (b) If  $A_2 = 80^\circ$  write down *all* the possible values of  $B_2$  and  $C_2$ .
  - (c) If  $A_3 = 40^\circ$  write down *all* the possible values of  $B_3$  and  $C_3$ .
  - (d) Are any of the triangles you listed in part (a), (b), or (c) similar?  
If so, classify them into similarity classes.

Hint: There might be more than one triangle in each part of (a), (b) and (c).

4. An  $n$ -gon is a polygon of  $n$  sides (e.g. a triangle is a 3-gon). If each side is of equal length, then it is called a regular  $n$ -gon. (e.g. an equilateral triangle).  
Write down an algebraic expression for the sum of the angles inside a regular  $n$ -gon.
- \*5. If  $ABC$  is an isosceles triangle and  $A = \theta^\circ$ . Classify all possible angles for  $B$  and  $C$ .

\*Optional questions, not to be handed in.