TB(2B) Ch. 10 Angles Related to Triangles and Polygons
Conventional Questions

1. [16-17 S.2 Final Exam #6]

In **Figure 1**, *ACDEF* is a regular pentagon while *ABC* is an isosceles triangle with $AB = BC$. If $\angle BCD = 136°$, find $\angle ABC$. **(4 marks)**

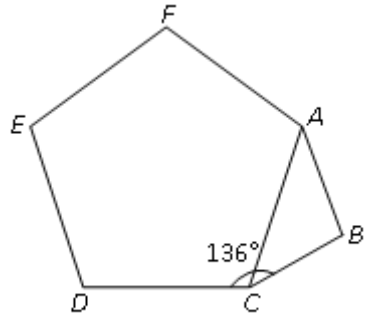

Figure 1

2. [17-18 Standardized Test 2 #4]

In **Figure 2**, five straight lines form a pentagon *ABCDE*. It is given that $\angle TED = \angle CDS = \angle QBC$, $\angle BCD = 75°$ and $\angle PAE = \angle EAD = 42°$. Find $\angle ADE$. **(3 marks)**

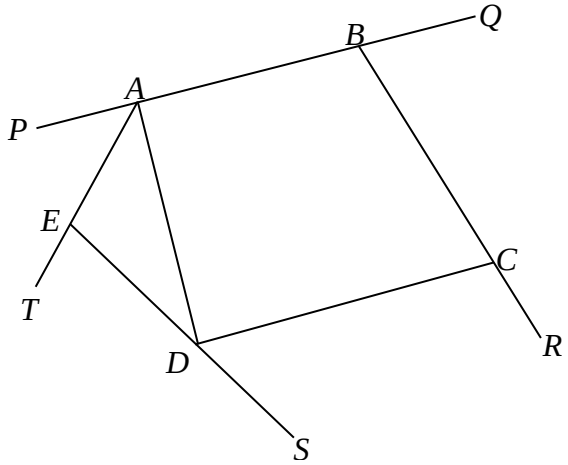

Figure 2

3. [17-18 S.2 Final Exam #7]

In **Figure 2**, B and E are points on AC and AD respectively. It is given that $\angle ABE = \angle BAE$, $AC = AD$ and $\angle ACD = 75°$. Find x and y. **(3 marks)**

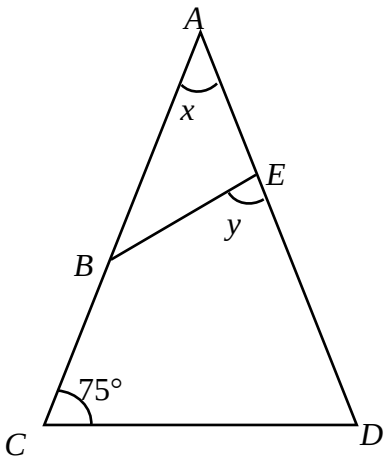

Figure 2

4. [18-19 S.2 S Test #5]

In **Figure 1**, AB // EC, $AB = BC = 5$ cm and $\angle ABC = 60°$. D is a point on EC such that AD // BC.

(a) Prove that ΔABC is an equilateral triangle.

(b) Find $\angle ADE$.

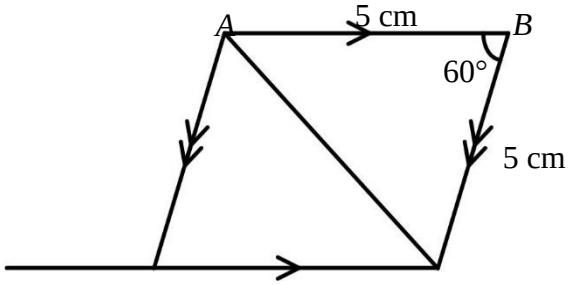

Figure 2

5. [17-18 Final Exam #10]

In **Figure 3**, $AD = BD$, $\angle ABD = \angle DBC$ and $AB \parallel DE$.

(a) Prove that ΔBDE is an isosceles triangle. **(2 marks)**

(b) Prove that $\Delta ABC \sim \Delta BDC$. **(2 marks)**

(c) If $AB = 12$ and $BD = 8$, find the length of DC. **(2 marks)**

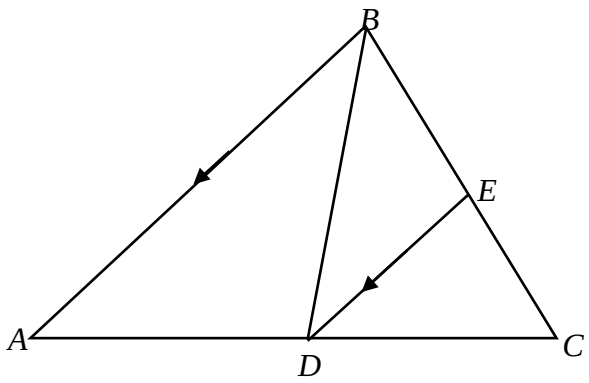

Figure 3

6. [18-19 Final Exam #10]

In **Figure 3**, AC and CB are sides of a regular n-sided polygon. AB is a diagonal and $\angle BAC = 5°$. AC is produced to D such that $\angle ABD = 90°$.

(a) Find $\angle ABC$. **(1 mark)**

(b) Find the value of n. **(2 marks)**

(c) Prove that ΔBCD is an isosceles triangle. **(2 marks)**

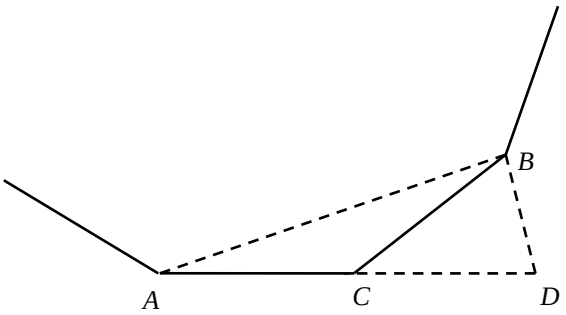

Figure 3

7. [20-21 Final #19]

In **Figure 8**, BDC is a straight line, $AD \parallel BE$, $AB = BE$, $AD \perp BC$, $\angle ACD = 55°$ and $\angle AEB = 72.5°$.

(a) Find $\angle ABE$. **(2 marks)**

(b) Find $\angle ABD$. **(2 marks)**

(c) Prove that $AC = BE$. **(2 marks)**

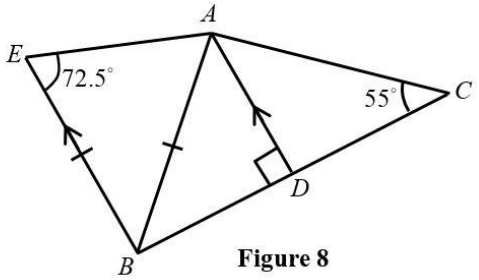

Figure 8