TB(2B) Ch. 9 Introduction to Deductive Geometry
Conventional Questions

1. [11-12 Final Exam, #10]

In **Figure 3**, $AB // DC$, AC intersects BD at E and $\angle ABE = \angle DCE$. F is a point on CD such that $EF \perp CD$.

(a) Show that $CE = ED$. **(2 marks)**

(b) If $\angle DCE = 60°$ and CE = 6 cm, find the area of ΔCDE. Leave your answer in surd form. **(4 marks)**

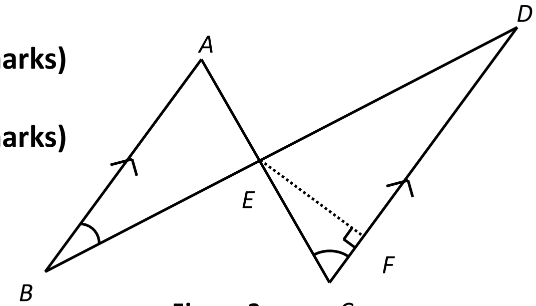

Figure 3

2. [12-13 Final Exam, #7]

In **Figure 3**, AB // DE, AB = 2, $BC = \sqrt{x^2 - 4}$, CE = 3x, DE = 6, ACE and BCD are straight lines.

(a) Prove that $\Delta ABC \sim \Delta EDC$. **(3 marks)**

(b) Peter claims that both ΔABC and ΔEDC are right-angled triangles. Do you agree? Explain your answer. **(3 marks)**

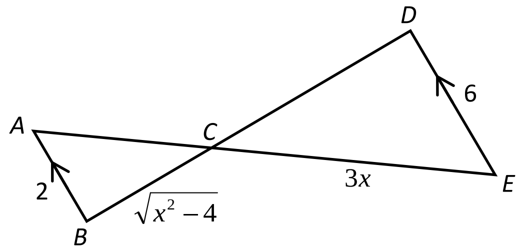

Figure 3

3. [13-14 Final Exam, #10]

In **Figure 3**, D is a point lying on AC such that $\angle ACB = \angle ABD$.

(a) Prove that $\Delta ABC \sim \Delta ADB$. **(2 marks)**

(b) Suppose AC = 25 cm, AB = 20 cm and BD = 12 cm. Prove that ΔABD is a right-angled triangle. **(3 marks)**

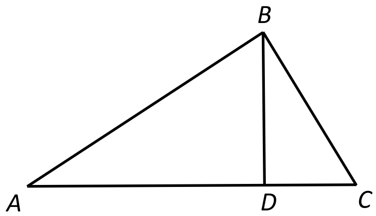

Figure 3

4. [14-15 Final Exam #13]

In **Figure 4**, M and N are points on AC and BC respectively such that $AC \times CM = BC \times CN$.

(a) Show that $\Delta ABC \sim \Delta NMC$.**(2 marks)**

(b) Using the result of **(a)**,

(i) if $\angle ABC = \angle BAC$, show that ΔNMC is an isosceles triangle.**(2 marks)**

(ii) find $\angle ABC + \angle AMN$.**(2 marks)**

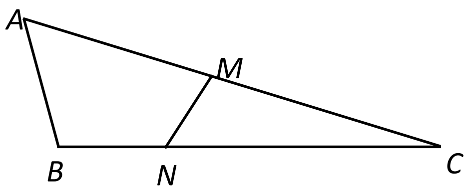

Figure 4

5. [15-16 Final Exam #5]

In **Figure 1**, *ABCD* and *EFG* are straight lines, and $\angle BFC = 45°$.

(a) Find *x*. **(2 marks)**

(b) Prove that *AD* // *EG*. **(2 marks)**

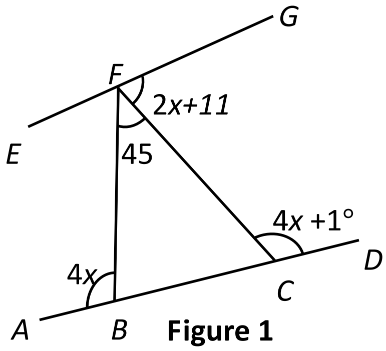

Figure 1

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