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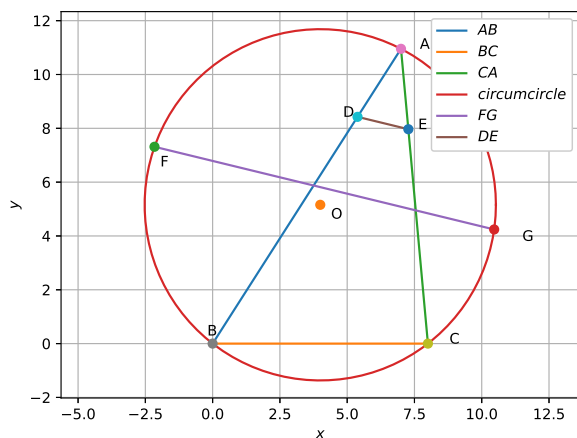


Fig. 1.5

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Abstract—This manual has exercises on based on problems in Math Olympiad.

1 2018.1

- 1.1 Plot $\triangle ABC$ for $a = 8, b = 11$ and $c = 13$.
- 1.2 Draw the circumcircle Γ of $\triangle ABC$.
- 1.3 Mark D and E on AB and AC respectively, such that $AD = AE = 7$.
- 1.4 Draw the perpendicular bisectors FD and GE such that F and G lie on the circumcircle Γ .
- 1.5 Draw DE and FG and find their direction vectors. Prove that $DE \parallel FG$ in Fig 1.5

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2 2018.6

2.1 Write a program to find all integers $n \geq 3$, for which

$$a_i a_{i+1} + 1 = a_{i+2}, \quad i = 1, 2, \dots, n \quad (1)$$

such that

$$a_{n+1} = a_1, a_{n+2} = a_2. \quad (2)$$