TB(1B) Ch.8-Angles Related to Straight Lines and Triangles
Conventional Questions

1. [16-17 Final Exam, #10]

In **Figure 3**, *DEC* is a straight line and *AB* // *DC*. It is given that $\angle BAE = 55^o$, $\angle CBE = 46^o$, $\angle BCE = 72^o$ and $\angle ADE = 62^o$.

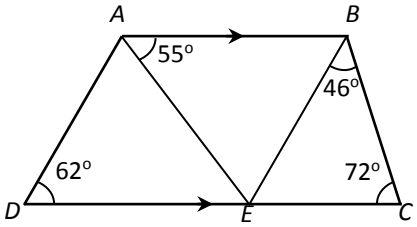


Figure 3

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

(b) Prove that $\Delta ABE \cong \Delta EDA$. **(2 marks)**

(c) Prove that *AD* // *BE*. **(2 marks)**

2. [17-18 Standardised Test 2, 1]

In **Figure 1**, *ABCD* and *EFG* are parallel straight lines, $\angle DCF = 115°$, $\angle BFC = 25°$.

(a) Find *x* and *y*. **(4 marks)**

(b) Elaine claims that $AD \perp BF$. Do you agree? Explain briefly. **(2 marks)**

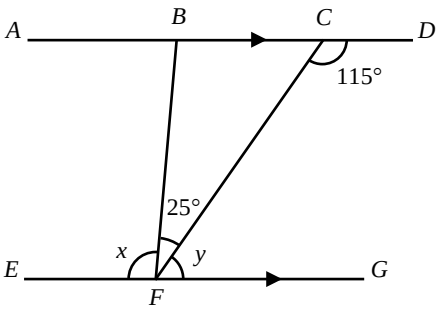


Figure 1

3. [17-18 Standardised Test 2, 5]

In **Figure 4**, *ABC*, *BHG*, *CDF*, *EFG* and *AHDE* are straight lines. $\angle AHB = \angle EDF = 30^o$ and $\angle BAH = 50^o$ and $\angle EGH = 100^o$.

(a) Prove that *AC // EG*. **(2 marks)**

(b) Prove that *BG // CF*. **(2 marks)**

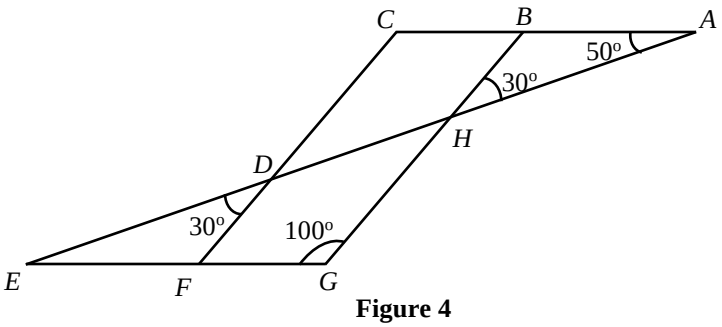


Figure 4

4. [17-18 Final Exam, 8]

In **Figure 5**, *ABCD* is a quadrilateral. Given that *AD* // *BC*, *AB* = *DC* and $\angle A = \angle C$. Prove that $\Delta ABD \cong \Delta CDB$.

(2 marks)

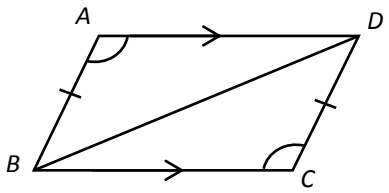


Figure 5

5. [17-18 Final Exam, 9]

(a) In **Figure 6**, *PQ* // *RS*, *AEC*, *DEB*, *PABQ* and *RDCS* are straight lines. Find *a* and *b*. **(4 marks)**

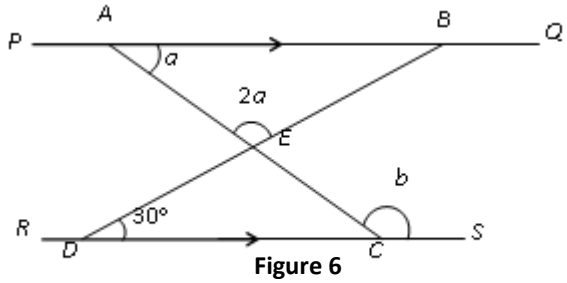


Figure 6

(b) In **Figure 7**, $\angle ACD = 32^\circ$, $\angle KIJ = 148^\circ$, *ACG*, *BCDF*, *EDIK* and *HIJ* are straight lines. It is given that *AG* and *EK* are parallel lines. Prove that *BF* // *HJ*. **(2 marks)**

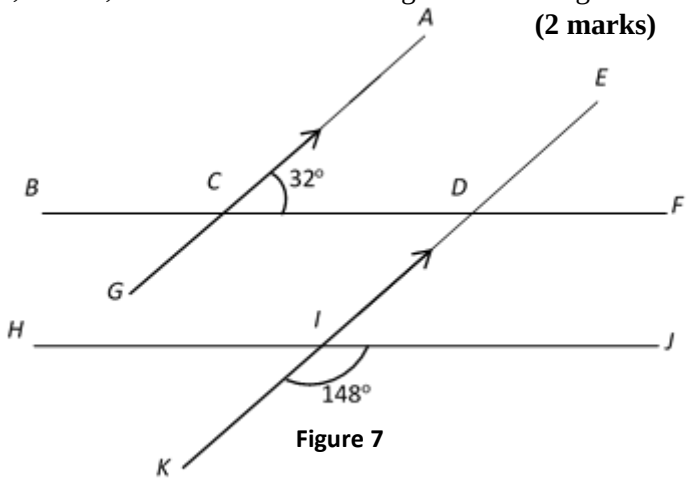


Figure 7

6. [18-19 Mid-year Exam, 12]

In **Figure 3**, *AGB*, *DGF* and *CFBE* are straight lines. Find *x*. **(3 marks)**

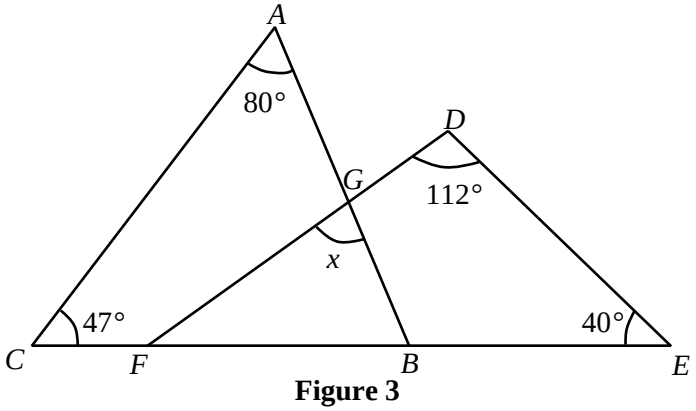


Figure 3

7. [18-19 Standardised Test 2, 3]

In **Figure 1**, *AOD* is a straight line. It is given that *OB* bisects $\angle AOC$, find the value of x. **(2 marks)**

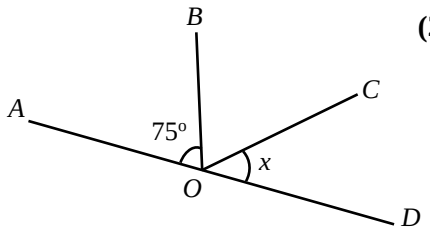


Figure 1

8. [18-19 Final Exam, 9]

In **Figure 4**, *ACD* and *BCE* are straight lines. $\angle CAB = 55°$ and reflex $\angle ABC = 295°$. Find y. **(2 marks)**

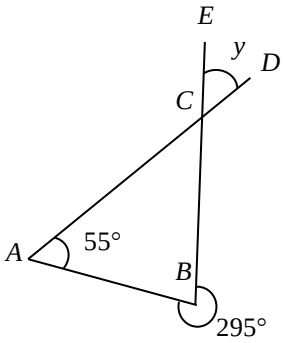


Figure 4

9. [18-19 Final Exam, 15]

In **Figure 9**, *BCD* is a straight line. *AF*, *CG* and *DH* intersect at *E* and *AF* // *BD*. It is given that $\angle DEF = 2x - 10°$, $\angle GEH = x + 40°$, $\angle ECD = 3x$, $\angle ECB = 7y$ and $\angle ABC = 5y$.

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

(b) Peter claims that *AB* // *EC*. Do you agree?
Explain your answer. **(2 marks)**

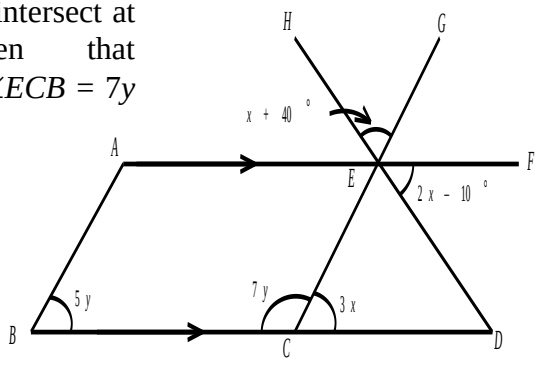


Figure 9

10. [20-21 Standardized Test, #2]

In **Figure 1**, $\angle ABC = 3x$, $\angle BCA = 50° - x$ and $\angle CAB = 2x - 10°$. Find the value of x. **(2 marks)**

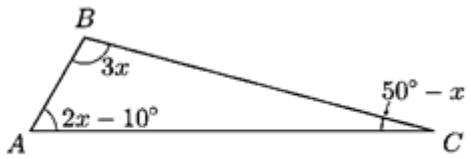


Figure 1

11. [20-21 Standardized Test, #3]

In **Figure 2**, EBD is a straight line, $AB//CD$ and reflex $\angle BDC = 318°$. Find the value of x. **(3 marks)**

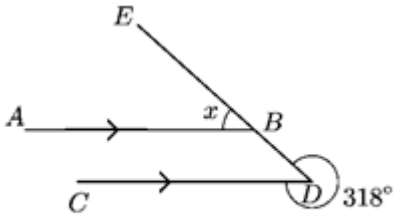


Figure 2

12. [20-21 Standardized Test, #6]

In **Figure 3**, *D* is a point on *CE*. *AD* intersects *BF* at *G*. If $\angle CGD = 100°$, $\angle GCD = 50°$ and $\angle AGB = 30°$, prove that *BF* // *CE*. **(3 marks)**

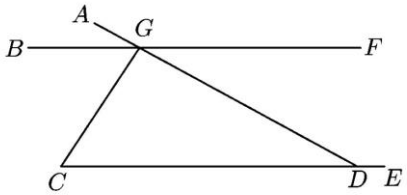


Figure 3

13. [20-21 Standardized Test, #8]

In **Figure 4**, *AD* and *BD* bisect $\angle BAC$ and $\angle ABC$ respectively. If $\angle ADB = 112°$, find $\angle ACB$. **(3 marks)**

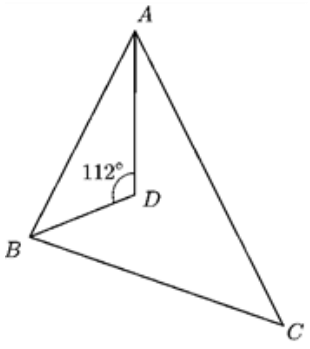


Figure 4

14. [20-21 Final Exam, #9]

In **Figure 3**, *BCF* and *DCE* are straight lines. Prove that $AB \parallel DE$. **(3 marks)**

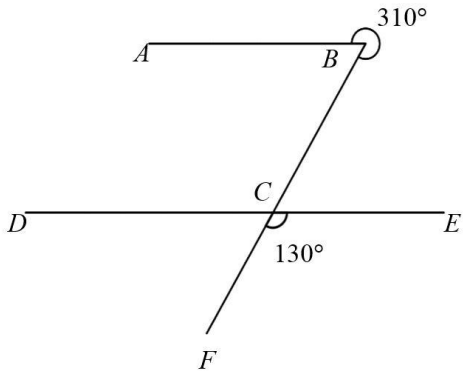
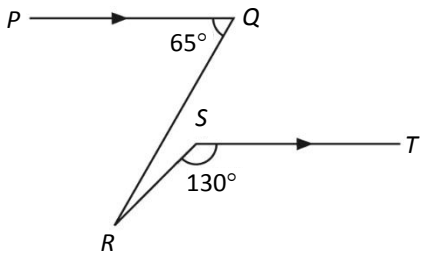


Figure 3

15. [20-21 Final Exam, #15]

In **Figure 6**, $PQ \parallel ST$, $\angle PQR = 65°$ and $\angle RST = 130°$. Find $\angle QRS$. **(3 marks)**



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