

REV-TTC-2324-ASM-SET 2-MATH**Suggested solutions****Multiple Choice Questions**

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|-------|-------|-------|-------|-------|
| 1. B | 2. D | 3. D | 4. D | 5. C |
| 6. D | 7. D | 8. A | 9. B | 10. B |
| 11. C | 12. C | 13. D | 14. A | 15. D |
| 16. A | 17. B | 18. C | 19. C | 20. C |
| 21. A | 22. D | 23. D | 24. B | 25. A |
| 26. C | 27. D | 28. A | 29. B | 30. C |

1. B

$$\angle BCD = \angle EBD = 70^\circ$$

$$\angle CDB = \angle EBD = 70^\circ$$

$$\angle CBD = 180^\circ - 70^\circ - 70^\circ = 40^\circ$$

2. D

$$\angle EDB = \angle EBA = 50^\circ$$

$$\angle EBD = \angle BDC = 60^\circ$$

$$\angle BED = 180^\circ - 50^\circ - 60^\circ = 70^\circ$$

3. D

$$\angle BCE = \angle CEG = 70^\circ$$

$$\angle CBE = \angle CEG = 70^\circ$$

$$\angle BEC = 180^\circ - 70^\circ - 70^\circ = 40^\circ$$

$$\angle ABE = \angle BEC = 40^\circ$$

$$\angle ADE = \angle ABE = 40^\circ$$

4. D

$$\text{Let } \angle OBA = x.$$

$$\angle OAT = 90^\circ$$

$$\angle TAB = 90^\circ - x$$

$$\angle ACB = \angle TAB = 90^\circ - x$$

$$\angle OCB = \angle ACB - 13^\circ = 77^\circ - x$$

$$\angle TCA + \angle TAC + \angle ATC = 180^\circ$$

$$[13^\circ + (77^\circ - x)] + [(90^\circ - x) + (x + 13^\circ)] + 40^\circ = 180^\circ$$

$$x = 53^\circ$$

5. C

$$\angle BAC = 90^\circ$$

$$\angle ABC = 180^\circ - 90^\circ - 35^\circ = 55^\circ$$

$$\angle CAP = \angle ABC = 55^\circ$$

6. D

$$\angle ADC = 180^\circ - 74^\circ = 106^\circ$$

$$\text{Since } \widehat{AD} = \widehat{DC}, \text{ we have } AD = DC \text{ and } \angle DCA = \frac{180^\circ - 106^\circ}{2} = 37^\circ.$$

$$\angle ACB = \angle SAB = \angle ABC = 74^\circ$$

$$\angle BCD = 74^\circ + 37^\circ = 111^\circ$$

7. D

$$\angle CDB = \angle DAC = 34^\circ$$

$$\angle DCB = \frac{180^\circ - 34^\circ}{2} = 73^\circ$$

$$\angle BDA = 180^\circ - 73^\circ - 34^\circ - 34^\circ = 39^\circ$$

8. A

$$\angle BEF = \angle FBC = 40^\circ$$

$$\angle EBF = \angle EFG - \angle BEF = 95^\circ - 40^\circ = 55^\circ$$

$$\angle DBE = \angle EBF = 55^\circ \quad \angle ABD = 180^\circ - 55^\circ - 55^\circ - 40^\circ = 30^\circ$$

9. B

$$\text{Let } \angle ABC = x.$$

$$\angle CAT = \angle ABC = x$$

$$\angle BAC = \angle ACB = \angle ATC + \angle CAT = x + 48^\circ$$

Consider $\triangle ABC$.

$$x + 2(x + 48^\circ) = 180^\circ$$

$$x = 28^\circ$$

10. B

$$\angle ADB = \angle TAB = 42^\circ$$

$$\frac{\angle BDC}{\angle ADB} = \frac{\widehat{BC}}{\widehat{AB}}$$

$$\frac{\angle BDC}{42^\circ} = \frac{2}{3}$$

$$\angle BDC = 28^\circ$$

$$\angle ADC = 28^\circ + 42^\circ = 70^\circ$$

11. C

$$\angle ADE = \angle CAE = 80^\circ$$

$$\angle ADF = \angle AEF = 36^\circ$$

$$\angle EDF = 80^\circ - 36^\circ = 44^\circ$$

12. C

$$\angle DBA = \angle BED$$

$$\angle BED + (\angle DBA + 51^\circ) + 37^\circ = 180^\circ$$

$$2\angle BED + 88^\circ = 180^\circ$$

$$\angle BED = 46^\circ$$

13. D

Draw line segments BD and AB .

$$\angle CDB = \angle CBQ = 39^\circ$$

$$\angle BDA = 79^\circ - 39^\circ = 40^\circ$$

$$\angle ABD = \angle DAP = 42^\circ$$

$$\angle DAB = 180^\circ - 42^\circ - 40^\circ = 98^\circ$$

$$\angle BCD = 180^\circ - 98^\circ = 82^\circ$$

14. A

$$\angle DAC = 90^\circ$$

$$\angle ACD = 180^\circ - 90^\circ - 48^\circ = 42^\circ$$

$$\angle DAT = \angle ACD = 42^\circ$$

15. D

$$\angle QPS = 180^\circ - 123^\circ = 57^\circ$$

$$\angle PQS = 180^\circ - 57^\circ - 48^\circ = 75^\circ$$

$$\angle APS = \angle PQS = 75^\circ$$

16. A

$$\text{Let } \angle BAQ = x. \angle ADB = \angle BAQ = x$$

$$\angle PAB + \angle PBA = \angle BAQ = x$$

$$\angle APB = \angle ABP = \frac{x}{2}$$

$$\angle DAB = 180^\circ - 57^\circ$$

$$57^\circ + x + \frac{x}{2} = 180^\circ$$

$$x = 38^\circ$$

17. B

$$\angle SPQ = 180^\circ - 123^\circ = 57^\circ$$

$$\angle SQP = 180^\circ - 57^\circ - 48^\circ = 75^\circ$$

$$x = \angle SQP = 75^\circ$$

18. C

$$PA = PB$$

$$\angle PAB = \frac{180^\circ - 46^\circ}{2} = 67^\circ$$

$$\angle ACB = \angle PAB = 67^\circ$$

$$\angle ABC = 180^\circ - 67^\circ - 28^\circ = 85^\circ$$

$$\angle ADC = 180^\circ - 85^\circ = 95^\circ$$

19. C

$$AB = AD$$

$$\angle ADB = \frac{180^\circ - 80^\circ}{2} = 50^\circ$$

$$\angle BCD = \angle ADB = 50^\circ$$

$$\angle DBC = 180^\circ - 50^\circ - 45^\circ = 85^\circ$$

20. C

$$EC = EA$$

$$\angle ECA = \angle EAC = 36^\circ$$

$$FA = FD$$

$$\angle FDA = \angle DAF = 28^\circ$$

$$\angle ADC = \angle EAC = 36^\circ$$

$$\angle ACD = \angle FAD = 28^\circ$$

$$\angle CBD = 180^\circ - (36^\circ + 28^\circ) - (36^\circ + 28^\circ) = 52^\circ$$

21. A

$$\angle ABT = \angle ACB = 68^\circ$$

$$TA = TB$$

$$\angle BAT = \angle ABT = 68^\circ$$

$$\angle ATB = 180^\circ - 68^\circ - 68^\circ = 44^\circ$$

22. D

$$EB = EC$$

$$\angle EBC = \frac{180^\circ - 72^\circ}{2} = 54^\circ$$

$$\angle BAC = \angle EBC = 54^\circ$$

$$\angle ACF = \angle ABC = 63^\circ$$

$$AB = AC$$

$$\angle ABC = \frac{180^\circ - 54^\circ}{2} = 63^\circ$$

$$\angle DBE = 90^\circ$$

$$\angle CBD = 90^\circ - 54^\circ = 36^\circ$$

$$\angle CAF = \angle CBD = 36^\circ$$

$$\angle AFC = 180^\circ - 36^\circ - 63^\circ = 81^\circ$$

28. A

$$\angle ABE = \angle QAE = x$$

$$\angle EDC = \angle ABE$$

$$y = x$$

29. B

$$\angle APB = 90^\circ$$

$$\angle APB = \angle ABP = 68^\circ$$

$$\angle OPA = 90^\circ - 68^\circ = 22^\circ$$

$$\angle BOP = 180^\circ - 68^\circ - 68^\circ = 44^\circ$$

$$\angle ORP = \angle BOP = 44^\circ$$

$$\angle POR = 180^\circ - 44^\circ - 22^\circ = 114^\circ$$

$$\angle RQP = 180^\circ - 114^\circ = 66^\circ$$

30. C

$$OP = OB$$

$$\angle OBP = \angle BPQ = 12^\circ$$

$$\angle BOQ = 2\angle BPQ = 24^\circ$$

$$\angle OCB = \angle BOQ = 24^\circ$$

$$\angle BOC = 180^\circ - 24^\circ - 12^\circ = 144^\circ$$

$$\angle BAC = 180^\circ - 144^\circ = 36^\circ$$