

BASIC GEOMETRY

Form 1 Regular Course

Vol 4

Part 3B – Triangle (B)

1. (a) $\angle ABC = 180^\circ - 50^\circ - 90^\circ = 40^\circ$ (\angle sum of Δ)
(b) $\angle EDF = 180^\circ - 60^\circ - 64^\circ = 56^\circ$ (\angle sum of Δ)
(c) $\angle BGD = 180^\circ - \angle ABC - \angle EDF = 84^\circ$ (\angle sum of ΔBDG)
 $\angle BGF = 180^\circ - \angle BGD = 96^\circ$ (adj. \angle s on st. line)

2. (a) $x + 60^\circ + 70^\circ = 180^\circ$ (\angle sum of Δ)
 $x = 50^\circ$
 $y + 60^\circ + 45^\circ + x = 180^\circ$ (\angle sum of Δ)
 $y = 25^\circ$
(b) $\angle ADC = 25^\circ + 60^\circ = 85^\circ \neq 90^\circ$
Therefore, AD is not perpendicular to CD .
(c) ΔACD and ΔBCD

3. $x = 180^\circ - 65^\circ = 115^\circ$ (adj. \angle s on st. line)
 $y = 180^\circ - 25^\circ - x = 40^\circ$ (\angle sum of ΔQRT)
 $z = 180^\circ - 25^\circ - 25^\circ - y = 90^\circ$ (\angle sum of ΔQRS)

4. $\angle PQY = 180^\circ - 90^\circ = 90^\circ$ (adj. \angle s on st. line)
 $\angle PYQ = 180^\circ - 30^\circ - 90^\circ = 60^\circ$ (\angle sum of $\triangle PQY$)
 $x = 180^\circ - 60^\circ - 70^\circ = 50^\circ$ (\angle sum of $\triangle XYZ$)

5. B
 $\angle ACB = 180^\circ - 64^\circ - 41^\circ - 18^\circ = 57^\circ$ (\angle sum of $\triangle ABC$)
 $x = 180^\circ - 18^\circ - 57^\circ = 105^\circ$ (\angle sum of $\triangle BCD$)
 $y = 180^\circ - 105^\circ - 41^\circ = 34^\circ$ (\angle sum of $\triangle BDE$)

6. C
 $\angle AEC = 180^\circ - 78^\circ = 102^\circ$ (adj. \angle s on st. line)
 $x = 180^\circ - 56^\circ - 102^\circ = 22^\circ$ (\angle sum of $\triangle ACE$)
 $\angle BED = \angle AEC = 102^\circ$ (vert. opp. \angle s)
 $y = 180^\circ - 2x - 102^\circ = 34^\circ$ (\angle sum of $\triangle BDE$)

7. D
 $\angle EDF = 180^\circ - 76^\circ - x$ (\angle sum of $\triangle DEF$)
 $\angle ABC = 180^\circ - 41^\circ - y$ (\angle sum of $\triangle ABC$)
 $\angle EDF + \angle ABC + 70^\circ = 180^\circ$ (\angle sum of $\triangle BDG$)
 $180^\circ - 76^\circ - x + 180^\circ - 41^\circ - y + 70^\circ = 180^\circ$
 $x + y = 133^\circ$

8. A
 $\angle BDF = 180^\circ - 24^\circ - y = 156^\circ - y$ (\angle sum of $\triangle BDF$)
 $\angle ADC = 180^\circ - (156^\circ - y) = 24^\circ + y$ (adj. \angle s on st. line)
 $x + 24^\circ + y + 34^\circ = 180^\circ$ (\angle sum of $\triangle ACD$)
 $x + y = 122^\circ$

9. A
 $x = 180^\circ - 112^\circ = 68^\circ$ (adj. \angle s on st. line)
 $y = 180^\circ - 2x = 44^\circ$ (\angle sum of $\triangle BCD$)
 $z = 180^\circ - 112^\circ - y = 24^\circ$ (\angle sum of $\triangle ACD$)

10. $\angle AFC = 180^\circ - 135^\circ = 45^\circ$ (adj. \angle s on st. line)
 $\angle ACF = 180^\circ - 42^\circ - 45^\circ = 93^\circ$ (\angle sum of $\triangle ACF$)
 $\angle DCE = 180^\circ - 93^\circ = 87^\circ$ (adj. \angle s on st. line)
 $\angle CDB = 180^\circ - 56^\circ - 87^\circ = 37^\circ$ (\angle sum of $\triangle CDE$)