

The four generator nilpotent Lie algebras with immediate descendants of dimension 8

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$$\langle a, b, c, d \mid \text{class } 1 \rangle \quad (4.1)$$

$$\langle a, b, c, d \mid cb, da, db, dc, \text{class } 2 \rangle \quad (6.4)$$

$$\langle a, b, c, d \mid ca, cb, da, db, \text{class } 2 \rangle. \quad (6.5)$$

$$\langle a, b, c, d \mid cb, da, db - ca, dc, \text{class } 2 \rangle \quad (6.6)$$

$$\langle a, b, c, d \mid cb, da, db - ca, dc - \omega ba, \text{class } 2 \rangle \quad (6.7)$$

$$\langle a, b, c, d \mid da, db, dc, \text{class } 2 \rangle. \quad (7.15)$$

$$\langle a, b, c, d \mid ca, da, db, \text{class } 2 \rangle. \quad (7.16)$$

$$\langle a, b, c, d \mid ca, da, dc, \text{class } 2 \rangle. \quad (7.17)$$

$$\langle a, b, c, d \mid ca, da, dc - ba, \text{class } 2 \rangle. \quad (7.18)$$

$$\langle a, b, c, d \mid ba, da - cb, dc, \text{class } 2 \rangle. \quad (7.19)$$

$$\langle a, b, c, d \mid da, db - \omega ca, dc - ba, \text{class } 2 \rangle. \quad (7.20)$$

$$\langle a, b, c, d \mid ca, cb, da, db, dc, \text{class } 3 \rangle. \quad (7.21)$$

$$\langle a, b, c, d \mid ca, cb - baa, da, db, dc, \text{class } 3 \rangle. \quad (7.22)$$

$$\langle a, b, c, d \mid ca, cb - bab, da, db, dc, \text{class } 3 \rangle. \quad (7.23)$$

$$\langle a, b, c, d \mid ca - bab, cb - \omega baa, da, db, dc, \text{class } 3 \rangle. \quad (7.24)$$

$$\langle a, b, c, d \mid ca, cb - baa, da, db - bab, dc, \text{class } 3 \rangle. \quad (7.25)$$

$$\langle a, b, c, d \mid ca - bab, cb + \lambda baa, da, db - bab, dc, \text{class } 3 \rangle (\lambda = 1, \omega). \quad (7.26)$$

$$\langle a, b, c, d \mid ca, cb, da, db, dc - baa, \text{class } 3 \rangle. \quad (7.27)$$

$$\langle a, b, c, d \mid ca - bab, cb, da, db, dc - baa, \text{class } 3 \rangle. \quad (7.28)$$

$$\langle a, b, c, d \mid cb, da, db, dc, baa, bac, caa, cac, \text{class } 3 \rangle. \quad (7.29)$$

$$\langle a, b, c, d \mid cb, da - bab, db, dc, baa, bac, caa, cac, \text{class } 3 \rangle. \quad (7.31)$$

$$\langle a, b, c, d \mid cb, da, db, dc, bab, bac, caa, cac, \text{class } 3 \rangle. \quad (7.38)$$

$$\langle a, b, c, d \mid cb, da, db - baa, dc, bab, bac, caa, cac, \text{class } 3 \rangle. \quad (7.39)$$

$$\langle a, b, c, d \mid cb, da, db, dc - baa, bab, bac, caa, cac, \text{class } 3 \rangle. \quad (7.40)$$

$$\langle a, b, c, d \mid cb - baa, da, db, dc, bab, bac, caa, cac, \text{class } 3 \rangle. \quad (7.41)$$

$$\langle a, b, c, d \mid ca, cb, da, db, baa, dcc, dcd, \text{class } 3 \rangle. \quad (7.44)$$

$$\langle a, b, c, d \mid ca - bab, cb, da, db, baa, dcc, dcd, \text{class } 3 \rangle. \quad (7.45)$$

$$\langle a, b, c, d \mid cb, da, db - ca, dc - baa, bab, bac, bad, \text{class } 3 \rangle. \quad (7.50)$$

$$\langle a, b, c, d \mid cb, da, db - ca, dc, bab, bac, bad, \text{class } 3 \rangle. \quad (7.51)$$

$$\langle a, b, c, d \mid cb - baa, da, db - ca, dc, bab, bac, bad, \text{class } 3 \rangle. \quad (7.52)$$

$$\langle a, b, c, d \mid ca, cb, da, db, dc, baa, \text{class } 4 \rangle \quad (7.55)$$

$$\langle a, b, c, d \mid ca, cb, da, db, dc, baa - babb, \text{ class } 4 \rangle \quad (7.56)$$

$$\langle a, b, c, d \mid ca - babb, cb, da, db, dc, baa, \text{ class } 4 \rangle \quad (7.57)$$

$$\langle a, b, c, d \mid ca - babb, cb, da, db, dc, baa - babb, \text{ class } 4 \rangle \quad (7.58)$$

$$\langle a, b, c, d \mid ca + bab, cb, da, db, dc, baa, \text{ class } 4 \rangle \quad (7.61)$$

$$\langle a, b, c, d \mid ca + bab, cb, da - babb, db, dc, baa, \text{ class } 4 \rangle \quad (7.63)$$