

2.2.xa. Exercise answers

1.

| | | |
|-------|-----------------------------------|--|
| | | 1 Ext $\frac{(A \wedge C) \wedge B}{A \wedge C}$ |
| 1 Ext | $\frac{(A \wedge C) \wedge B}{B}$ | 2 Ext $\frac{A \wedge C}{C}$ |
| 4 QED | $\frac{B}{B}$ | 5 QED $\frac{C}{C}$ |
| 3 Cnj | $\frac{B \quad C}{B \wedge C}$ | |

2. a.

| | | |
|-------|--------------|-----|
| | A \wedge B | 1 |
| 1 Ext | A | (4) |
| 1 Ext | B | (3) |
| | • | |
| 3 QED | B | 2 |
| | • | |
| 4 QED | A | 2 |
| 2 Cnj | B \wedge A | |

b.

| | | |
|-------|--------------|---------|
| | A | (2),(3) |
| | • | |
| 2 QED | A | 1 |
| | • | |
| 3 QED | A | 1 |
| 1 Cnj | A \wedge A | |

c.

| | | |
|-------|-------------------------|-----|
| | $A \wedge (B \wedge C)$ | 1 |
| | A | (7) |
| 1 Ext | $B \wedge C$ | 2 |
| 1 Ext | B | (6) |
| 2 Ext | C | (5) |
| 2 Ext | | |
| | | • |
| | | |
| 5 QED | C | 4 |
| | | • |
| | | |
| 6 QED | B | 4 |
| | | |
| 4 Cnj | $C \wedge B$ | 3 |
| | | • |
| | | |
| 7 QED | A | 3 |
| | | |
| 3 Cnj | $(C \wedge B) \wedge A$ | |

d.

| | | |
|-------|------------------------------------|-----|
| | A | (7) |
| | $B \wedge C$ | 1 |
| | D | |
| | B | (6) |
| 1 | C | (5) |
| 1 | | |
| | | • |
| | | |
| 5 QED | C | 3 |
| | | • |
| | | |
| 6 QED | B | 4 |
| | | • |
| | | |
| 7 QED | A | 4 |
| | | |
| 4 Cnj | $B \wedge A$ | 3 |
| | | |
| 3 Cnj | $C \wedge (B \wedge A)$ | 2 |
| | | • |
| | | |
| | B | 2 |
| | | |
| 2 Cnj | $(C \wedge (B \wedge A)) \wedge B$ | 2 |

