

Solution:

5. Algebra Problem:

$$\begin{aligned}(y + 2)(y + 3) &= (y + 2)y + (y + 2)3 \quad (\text{distributive prop.}) \\&= y(y + 2) + 3(y + 2) \quad (\text{commutative prop.}) \\&= y \cdot y + 2y + 3y + 3x2 \quad (\text{distributive prop.}) \\&= y \cdot y + (2 + 3)y + 3x2 \quad (\text{distributive prop.}) \\&= y \cdot y + 5y + 6 \quad (\text{arithmetic})\end{aligned}$$