

8. We will use a ratio to solve this problem. The quantity of sugar required for 10 people has the same relationship to the quantity of sugar required for 8 people as 10 does to 8.

$$Q_{10} / Q_8 = 10 / 8$$

$$Q_{10} / (200 \text{ mg}) = 10 / 8$$

We want to get  $Q_{10}$  isolated on the left hand side of the equation, so we multiply both sides by 200 milligrams

$$Q_{10} (200 \text{ mg}) / (200 \text{ mg}) = (10) (200 \text{ mg}) / 8$$

$$Q_{10} = 2000 \text{ mg} / 8$$

$$Q_{10} = 250 \text{ mg}$$

You can check that the answer conforms to your expectations since the amount required for ten people is greater than that required for eight people, as you would expect.