Plane Provisions

The cabin (interior) of an airplane is partitioned into 3 distinct sections, or classes. The cost of a seat in each of the classes is different and the amenities in each class vary.

Seats	Width of Seat
First class	51 cm
Business class	x cm
Economy class	43 cm

1. The width of a seat in business class is the average of the widths of the seats in first class and economy class. Find the width of a seat in business class.

$$business = \frac{1st + econ}{2}$$

$$= \frac{51 + 43}{2}$$

$$= \frac{94}{2}$$

width of seat in business class is 47 cm

2. The cabin has a minimum width requirement so that each passenger on the plane has comfortable accommodations.

    a. The width of four business class seats and an aisle y must be at least 304.75 centimeters. Write an inequality that represents this situation.

    4 business seats + aisle $(y) \geq 304.75$

    $$4(47) + y \geq 304.75$$
    $$188 + y \geq 304.75$$
    $$-188 \qquad\qquad -188.00$$

    b. What is the minimum width of the aisle?

    $$y \geq 116.75 \text{ cm}$$

    minimum width of aisle is 116.75 cm

    c. An airplane row contains 8 business class seats and 2 aisles. What is the minimum width w of the cabin?

    8 business + 2 aisles

    $$8(47) \qquad + 2(116.75)$$
    $$376 \qquad + 233.5$$

    minimum width: 609.5 cm