

Practice with Standard Deviation – Answers

HWIII

AZ

1. mean: 41 inches, standard deviation: 8.912 inches
2. mean: 12.5 centimeters, standard deviation: 4.804 centimeters
3. mean: \$13.80, standard deviation: \$2.88
4. a. 47.1, 45.9, 47.9, 47.4, 45.1, 46, 45.3, 45.7cm
b. 1.03cm
c. below: 45.1cm; above: 47.9cm and 47.4cm
5. a. iii b. i c. ii
6. She would not let CDs be shipped that measure more than 12.024cm or less than 11.976cm.
7. a. Group A: mean = 184 ; Group B: mean = 84
b. Group A: st. dev = 1.528 ; Group B: st. dev. = 21.572
8. a. 1st period appears to have pulse rates most alike because that class had the smallest standard deviation.
b. 6th period might have the fastest pulse rates because that class has both the highest mean and the greatest standard deviation.

HW 111

$$1. \frac{32+45+39+51+28+54+37+42}{8} = 41 \text{ in.}$$

$$\sqrt{\frac{(32-41)^2 + (45-41)^2 + (39-41)^2 + (51-41)^2 + (28-41)^2 + (54-41)^2 + (37-41)^2 + (42-41)^2}{7}}$$

$$SD = 8.912 \text{ inches}$$

$$4. a) x_1 - 46.3 = 0.8 \quad x_2 = 46.3 = -0.4 \quad \dots \quad x_7 - 46.3 = -1$$
$$x_1 = 47.1 \text{ cm} \quad x_2 = 45.9 \text{ cm} \quad \dots \quad x_7 = 45.3 \text{ cm}$$

last one
solve with
the mean
eq.

$$b) \frac{(0.8)^2 + (-0.4)^2 + (1.6)^2 + (1.1)^2 + (-1.2)^2 + (-0.3)^2 + (-1)^2 + (-1.6)^2}{7}$$

$$= \sqrt{1.0657} = \boxed{1.032 \text{ cm}}$$

$$c) 46.3 + 1.032 = 47.332 \text{ (highest for 1 SD)}$$

$$46.3 - 1.032 = 45.268 \text{ (lowest for 1 SD)}$$