LABORATORY 6.2

DO IT! LABS

Complete Lab 6.2 online at www.pearsonhighered.com/powers.

Name _____ **Date** _____

Instructor _____ **Section** _____

Determining a Healthy Body Weight

EQUIPMENT

Results from Laboratory 6.1 and a calculator

DIRECTIONS

If your results from Laboratory 6.1 indicate that you need to lose or gain weight, you should calculate a goal body weight needed to achieve an optimal level of body fat or optimal BMI. Keep in mind that not everyone will need to lose or gain weight. If your weight is within the recommended levels and you are happy with your current body composition, weight maintenance should be your goal.

PART 1

		Example:	
Current weight	_____	*Current weight*	*176*
Current percent fat	_____	*Current percent fat*	*38*
Current BMI	_____	*Current BMI*	*29.3**
Goal percent fat	_____	*Goal percent fat*	*25–30*[†]
Goal BMI	_____	*Goal BMI*	*20–25 kg/m*^{2}

STEP 1: Calculate % of fat-free mass.

1 − _____ (current percent fat[‡]) = _____ (% fat-free mass) **Calculate**

Example: 1 − (0.38) = 0.62

STEP 2: Calculate fat-free weight.

_____ (% fat-free mass[‡]) × _____ (current body weight) = 0.00 (fat-free weight) **Calculate**

Example: 0.62 × 176 = 109.12

STEP 3: Calculate optimal weight, lower and upper ends of the range.

0.00 (fat-free weight)/(1 − _____ [optimal percent fat[‡]]) = 0.00 (optimal weight) **Calculate**

Repeat for the upper end of the range.

Example: 109.12 ÷ (1 − 0.25) = 145.5

109.12 ÷ (1 − 0.30) = 155.9

Example optimal range = 146 to 156 pounds

Your optimal range: _____ to _____

*We used a height of 65 inches.

[†]We selected values within the recommended healthy range. You can use the whole range, or you can use part of the range, as we did. The important thing to remember is that your goal should be within the recommended levels for your age and activity level.

[‡]Expressed as a decimal.

STEP 4: Calculate BMI based on your optimal weight range.

_____ to _____

Example:

1m = 39.25 in., 1 lb = 2.2 kg

65 in. ÷ 39.25 = 1.65 m

146 lb ÷ 2.2 = 66.2 kg

66.2 ÷ 1.65^2 = 24.3 kg/m^2

156 lb ÷ 2.2 = 70.7 kg

70.7 ÷ 165^2 = 25.9 kg/m^2

BMI: 24.3 to 25.9 kg/m^2

PART 2

Repeat the calculations for determining a healthy goal weight, using BMI.

goal weight (kg) = desired BMI × height (m^2)

Repeat for the upper end of the range

_____ to _____

Questions

1. Do the BMI values in part 1 of the lab place you in the recommended range? If not, why not?

2. Are there any differences between the BMI values from parts 1 and 2? If so, why?

To submit the completed lab, save the form to your computer and email it to your instructor or upload it to their digital dropbox as directed.