

2. Use the information from the table below of heights of Americans aged 18 to 24.

Heights of American Young Adults (in inches)

	Men	Women
Mean μ	68.5	65.5
Standard Deviation σ	2.7	2.5

- a. Miguel is 74 inches tall. What is his percentile for height?

$$z = \frac{74 - 68.5}{2.7} = 2.03$$

.9788

- b. Jackie is 62 inches tall. What is her percentile for height?

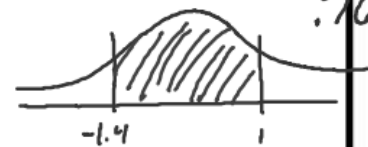
$$z = \frac{62 - 65.5}{2.5} = -1.40$$

.0808

- c. Abby is 5 feet 8 inches tall. What percentage of young women are between Jackie (Part b) and Abby in height?

$$z = \frac{68 - 65.5}{2.5} = 1$$

.8413



.8413 - .0808

.7605

- d. Gabriel is at the 90th percentile in height. What is his height?

$$2.7(1.28) = \left(\frac{x - 68.5}{2.7}\right)2.7$$

71.95 inches

$$3.45 = x - 68.5$$

- e. Yvette is at the 31st percentile in height. What is her height?

$$2.5(-.50) = \left(\frac{x - 65.5}{2.5}\right)2.5$$

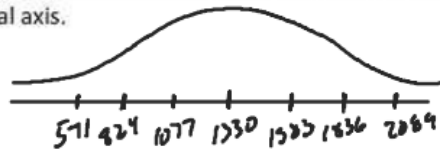
$$-1.25 = x - 65.5$$

64.25 inches

$$z = \frac{x - \mu}{\sigma}$$

3. All 11th-grade students in Pennsylvania are tested in reading and math on the Pennsylvania System of School Assessment (PSSA). The mean score on the PSSA math test in 2006-2007 was 1,330 with standard deviation 253. You may assume the distribution of scores is approximately normal. (Source: www.pde.state.pa.us/a_and_t/cwp/view.asp?A=3&Q=129181)

- a. Draw a sketch of the distribution of these scores with a scale on the horizontal axis.

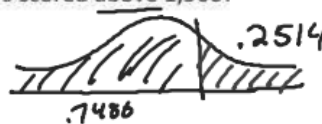


- b. What PSSA math score would be at the 50th percentile?

1330

- c. What percentage of 11th graders scored above 1,500?

$$z = \frac{1500 - 1330}{253} = .67$$



1 - .7486

- d. Javier's PSSA score was at the 76th percentile. What was his score on the test?

$$.76 = \frac{X - 1330}{253}$$

$$X = 1509.63$$