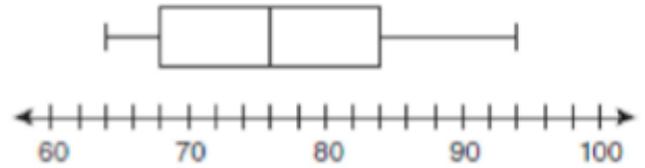






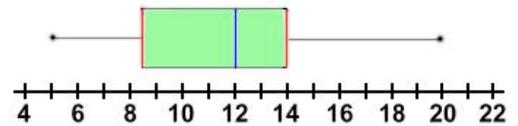
3) Use the following box plot of students test scores:



- a) What is the median test score?
- b) What percent of students scored above an 84%?
- c) What percent of students scored below a 76%?
- d) What is the range of the data? \_\_\_\_ What is the interquartile range of the data? \_\_\_\_

4). Answer the following questions related to fish length (measured in cm):

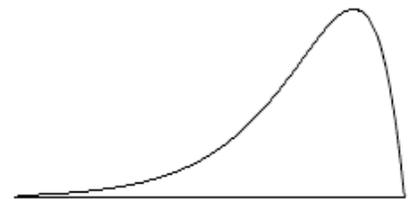
- 1. Find Q3?
- 2. Above what length is three quarters of the data?
- 3. Is there an outlier? How do you know?
- 4. Above what value where the top quarter of the fish?



- 5) How does a large standard deviation differ from a small standard deviation?
- 6) The average length of a football career is 5.2 years with a standard deviation of 1.5 years.
  - a) Sketch the normal curve for this distribution, labeling the x-axis with the values that are one, two, and three standard deviations from the mean.

b) What percentage of football players work for 5.2 years or less?

7) One class's distribution of female heights is shown to the right.



- a) Are the heights positively skewed, negatively skewed, or normally distributed?
- b) Explain what this means in terms of the females' heights in the class.
- c) If you calculated the mean and median of the heights, which would be greater?

Sections 7-1 to 7-4

Simplify each expression. Rationalize all denominators. Assume all variables are positive. Show all work!!!

$$a^n a^m = \quad (a^m)^n = \quad a^{-n} = \quad (ab)^n = \quad \frac{1}{a^{-n}} =$$

1.  $\sqrt[3]{-250a^9b^5}$

2.  $4\sqrt{16x^3y} \cdot 3\sqrt{24x^7y^2}$

3.  $\frac{3}{1 - \sqrt{2}}$

4.  $4\sqrt{63} + 9\sqrt{28} - 6\sqrt{7}$

5.  $(2 + 3\sqrt{7})(\sqrt{2} - 2\sqrt{7})$

6.  $(27x^{-12}y^3z^{-3})^{-1/3}$

Section 7-5

Solve Radical Equation...show all work...check for extraneous solutions.

$$(x - 2)^{2/3} + 15 = 24$$

$$\sqrt{x + 56} = 16$$

$$\sqrt{6x - 5} + 10 = 3$$

$$x - 12 = \sqrt{16x}$$

$$\sqrt{2x - 1} = \sqrt{x + 4}$$

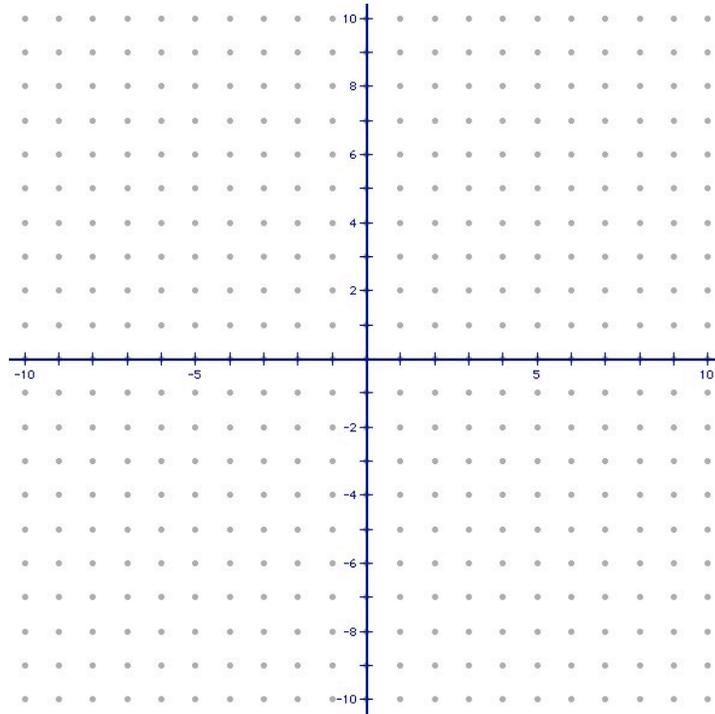
The volume of a sphere can be found using the formula  $V = \frac{4}{3}\pi r^3$

where  $r$  is the radius of the sphere. Find the length of the radius of a sphere that has a volume of  $80 \text{ m}^3$ . Round to two decimal places.

Section 7-6

Graph / Domain & Range...show all work

$$f(x) = 2\sqrt{x-1} - 2$$



Domain: \_\_\_\_\_

Range: \_\_\_\_\_

Given  $f(x) = 5 \cdot \sqrt[3]{x+2} + 9$

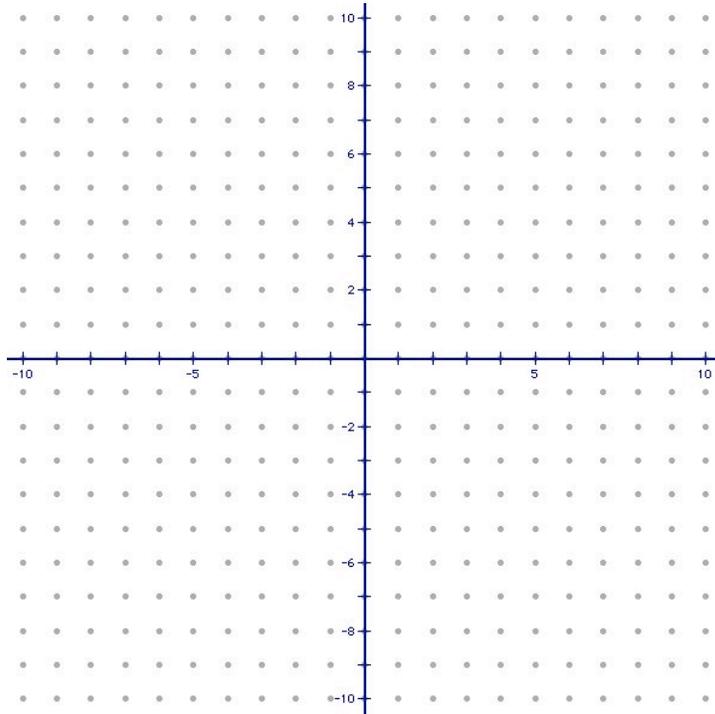
- a. Describe the horizontal shift.
  
  
  
  
  
- b. Describe the vertical shift.
  
  
  
  
  
- c. What is the domain?
  
  
  
  
  
- d. What is the range?

Graph the given function and then state the domain and range. Show your work!

$$f(x) = 2 \cdot \sqrt[3]{x + 2} - 3$$

Domain: \_\_\_\_\_

Range: \_\_\_\_\_



Given  $y = -2\sqrt{x - 3} + 4$

- Describe the horizontal shift.
- Describe the vertical shift.
- What is the domain?
- What is the range?