

A measurement is given. Find the minimum and maximum possible measurements.

← See Problem 4.

20. A doctor measures a patient's weight as 162 lb to the nearest pound.
 21. An ostrich egg has a mass of 1.1 kg to the nearest tenth of a kilogram.
 22. The length of an onion cell is 0.4 mm to the nearest tenth of a millimeter.

23. **Geometry** The table below shows the measured dimensions of a prism and the minimum and maximum possible dimensions based on the greatest possible error. What is the greatest possible percent error in finding the volume of the prism?

← See Problem 5.

Dimensions	Length	Width	Height
Measured	10	6	4
Minimum	9.5	5.5	3.5
Maximum	10.5	6.5	4.5

24. **Geometry** The side lengths of the rectangle at the right have been measured to the nearest half of a meter, as shown. What is the greatest possible percent error in finding the area of the rectangle?



B Apply

Find the percent change. Round to the nearest percent.

25. 2 ft to $5\frac{1}{2}$ ft

26. 18 lb to $22\frac{1}{4}$ lb

27. $140\frac{1}{4}$ g to $80\frac{3}{4}$ g

28. \$8.99 to \$15.99

29. \$168.45 to \$234.56

30. \$4023.52 to \$982.13

The measured dimensions of a rectangle are given to the nearest whole unit. Find the minimum and maximum possible areas of each rectangle.

31. 7 m by 8 m

32. 18 in. by 15 in.

33. 24 ft by 22 ft

34. **Writing** How are percent change and percent error similar?

35. **Open-Ended** Write a percent change problem that you recently experienced.

36. **Think About a Plan** In one season, an average of 6500 fans attended each home game played by the basketball team at a college. In the next season, the average number of fans per game increased by about 12%. What was the average number of fans per game for that season?

- What is missing—the new amount or the original amount?
- How can a percent change help you find the missing amount?

37. **Error Analysis** A student is trying to find the percent of change when an amount increases from 12 to 18, as shown. Describe and correct the student's error.

$$\begin{aligned} & \frac{\text{new amount} - \text{original amount}}{\text{original amount}} \\ &= \frac{18 - 12}{18} \\ &= \frac{6}{18} \approx 0.33, \text{ or } 33\% \end{aligned}$$