

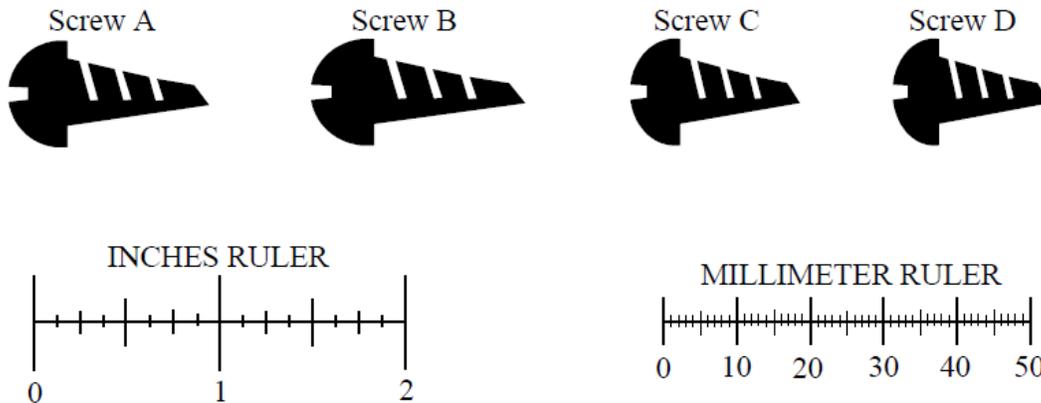
Measurement/Precision & Tolerance

Long-Term Memory Review – Grade 8

Review 1

1. Explain how to convert from a larger unit of measurement to a smaller unit of measurement. Include what operation(s) would be used to make the conversion.
2. List three *customary* units to measure weight. _____
3. Your company orders screws of 1 inch in length. Your company rejects screws that are one-eighth of an inch more or less than the desired length of 1 inch. Use a blank piece of paper and the ruler below to measure the following screws and tell which screws need to be rejected.

Which screws will be rejected? _____



4. One mile of road is equal to 1.61 kilometers. How many meters of road are equal to one mile?
 - A. 0.0161 m
 - B. 161.0 m
 - C. 1610 m
 - D. 16,100 m

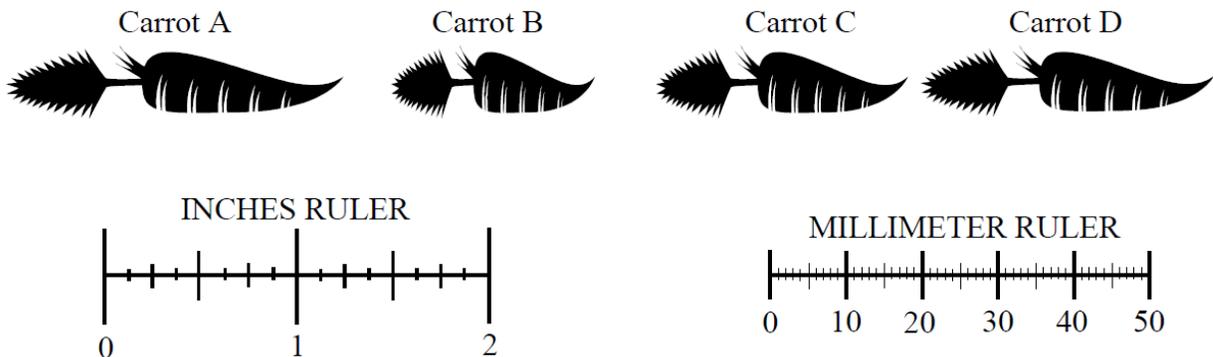
Measurement/Precision & Tolerance

Long-Term Memory Review – Grade 8

Review 2

1. Explain how to convert from inches to feet. Include what operation(s) would be used to make the conversion.
2. List the three base *metric* units. _____
3. A company produces jeans. If the jeans are too long, then stores cannot sell them. If the jeans are too short, then stores cannot sell them. Each pair of jeans produced needs to be 28 inches long. Management of the company decides that jeans are too long if the length of the jeans exceeds 28.5 inches, and a pair of jeans is too short if the length measures less than 27.5 inches. Explain why the company would need to reject jeans that are more than 28.5 inches and less than 27.5 inches.
4. A farmer grows baby carrots for resale at grocery stores. The farmer decides to reject any baby carrot that is too small or too large. The farmer decides that the desired length of a baby carrot, including the stem, is 35 mm from end-to-end. Any baby carrot that is 5 mm less or 5 mm more than 35 mm will be rejected for resale. Use a blank piece of paper and the ruler below to measure the following baby carrots from end-to-end and tell which baby carrots need to be rejected.

Which carrots will be rejected? (Include stem in your measurement.) _____



5. A full gallon of milk contains 3.8 liters. How many milliliters of milk are in a full gallon?
 A. 38 ml B. 380 ml C. 3,800 ml D. 38,000 ml
6. Frank is planning to make 2 gallons of fruit punch to serve at his club meeting. How many 12-ounce servings of punch can he serve with 2 gallons? (1 gallon = 128 ounces)
 A. 36 servings B. 21 servings C. 15 servings D. 10 servings



Measurement/Precision & Tolerance

Long-Term Memory Review – Grade 8

Review 3

1. Explain how to convert from kilograms to milligrams. Include what operation(s) would be used to make the conversion.
2. List three *customary* units to measure distance. _____
3. A company produces steel spokes for bicycle rims. If the spoke is too long, then it cannot be used. If the spoke is too short, then it cannot be used. Each rim produced needs thirty 16-inch spokes. Management of the company decides that a spoke is too long if it is more than 16.1 inches, and a spoke is too short if it is 15.9 inches. Explain why the company would need to reject spokes more than 16.1 inches and less than 15.9 inches.
4. A dump truck will hold 3 tons of dirt. A standard pick-up truck will hold 1500 pounds of dirt. How many times will the pick-up truck need to be filled to equal one load of the dump truck? (1 ton = 2000 pounds)
A. 5 times B. 4 times C. 3 times D. 1 time
5. Julie makes 5 gallons of juice at her club meeting. How many one-liter servings can she serve with 5 gallons? (1 gallon = 3.8 liters)
A. 28 servings B. 22 servings C. 19 servings D. 10 servings
6. The ideal storage temperature of a certain medicine is between 33° & 38° F. The temperature can be within 2° F of the ideal temperature before the medicine is no longer safe to use. The temperature in the refrigerator is 34° F. At what temperatures is the medicine no longer safe to use?



Measurement/Precision & Tolerance

Long-Term Memory Review – Grade 8

Review 4

1. Explain how to convert from a smaller unit of measurement to a larger unit of measurement. Include what operation(s) would be used to make the conversion.

2. What base *metric* unit would be used to measure the amount of milk in a bowl of cereal?

3. A couple hires a dump truck company to move gravel out of their backyard. The company tells the couple that a dump truck will hold 3 tons of dirt. There are over 75,000 pounds of gravel to move out of the couple's backyard. What is the minimum number of trips that the dump truck can make to move all the gravel out of the backyard? (1 ton = 2000 pounds)

A. 50 trips B. 38 trips C. 25 trips D. 13 trips

4. A full gallon of milk contains 3.8 liters. How many milliliters of milk are in a full gallon?

A. 38 ml B. 380 ml C. 3,800 ml D. 38,000 ml

5. The ideal storage temperature of a certain medicine is between 30° & 40° F. The temperature can be within 2° F of the ideal temperature before the medicine is no longer safe to use. The temperature in the refrigerator is 31° F.
 - a) At what temperatures is the medicine no longer safe to use?

 - b) There is a malfunction with the refrigerator and the temperature begins to drop at the rate of $\frac{1}{4}$ ° F every 2 hours. How long would it take for the temperature to reach a point where the medicine is no longer safe to use?



Measurement/Precision & Tolerance

Long-Term Memory Review – Grade 8

Quiz

1. Explain how to convert from kilograms to grams. Include what operation(s) would be used to make the conversion.
2. List three *customary* units to measure liquid. _____
3. A company produces steel spokes for bicycle tires. If the spoke is too long, then it cannot be used. If the spoke is too short, then it cannot be used. Each rim produced needs thirty 14-inch spokes. Management of the company decides that a spoke is too long if it is more than 14.1 inches, and a spoke is too short if it is 13.9 inches. Explain why the company would need to reject spokes more than 14.1 inches and less than 13.9 inches.
4. A full gallon of milk contains 3.8 liters. How many milliliters of milk are in a full gallon?
A. 38 ml B. 380 ml C. 3,800 ml D. 38,000 ml
5. Linda is planning to make 3 gallons of fruit punch to serve at her club meeting. How many 12-ounce servings of punch can she serve with 3 gallons? (1 gallon = 128 ounces)
A. 36 servings B. 32 servings C. 15 servings D. 10 servings
6. The ideal storage temperature of a certain medicine is between 33° & 38° F. The temperature can be within 1° F of the ideal temperature before the medicine is no longer safe to use. The temperature in the refrigerator is 35° F.
 - a) At what temperatures is the medicine no longer safe to use?
 - b) If the power to the refrigerator goes out, and the temperature rises 0.5° F every 1.5 hours, how long would it take for the temperature to reach a point where the medicine is no longer safe to use?

Measurement/Precision & Tolerance

Long-Term Memory Review – Grade 8

Answers

Review 1- Answers

- 1) multiply by the conversion rate, or by the number of smaller units per 1 larger unit
- 2) ounces, pounds, tons
- 3) Screw B, Screw C, and Screw D
- 4) C

Review 2- Answers

- 1) The number of inches are divided by 12. (1 ft = 12 in)
- 2) meter, liter, gram
- 3) The tolerance is ± 0.5 inches. Anything outside the range of tolerance must be rejected.
- 4) Carrot A and Carrot B
- 5) C
- 6) B

Review 3- Answers

- 1) The number of kilograms are multiplied by 1,000,000. (1 kg = 1,000,000 mg)
- 2) inches, feet, yards, miles
- 3) The tolerance is ± 0.1 inches. Anything outside the range of tolerance must be rejected.
- 4) B
- 5) C
- 6) temperatures less than 31° F or more than 40° F

Review 4- Answers

- 1) Divide by the conversion rate, or by the number of smaller units per 1 larger unit.
- 2) liter
- 3) D
- 4) C
- 5) a) temperatures less than 28° F or more than 42° F b) 24 hours

Quiz - Answers

- 1) The number of kilograms are multiplied by 1,000. (1 kg = 1,000 g)
- 2) ounces, cups, pints, quarts, gallons (also teaspoon, tablespoon, fluid ounce)
- 3) The tolerance is ± 0.1 inches. Anything outside the range of tolerance must be rejected.
- 4) C
- 5) B
- 6) a) temperatures less than 32° F or more than 39° F b) 12 hours or more