College Prep
Chapter 2 Test Review

Convert the following:

1. 12 weeks = 84 days (×7)
2. 394 seconds = 6 minutes & 34 seconds (÷60)
3. 5 days & 2 hours = 122 hours (×24, 120 + 2)

How much time has elapsed?

4. 2:13 pm to 9:38 pm 7h 25m (−2:13)
5. 1:40 pm to 4:17 pm 2h 37m (377 − 1:40)
6. 3:41 am to 1:48 pm 10h 7m (13:48 − 3:41)
7. 8:48 am to 5:11 pm 8h 23m (1617 − 8:48)

Convert the following:

7. 23° F = −5 °C

$C = \frac{5}{9}(F - 32)$

$C = \frac{5}{9}(23 - 32)$

$= -5$

8. 52° C = 125.6 °F

$F = \frac{9}{5}C + 32$

$\frac{9}{5} \cdot 52 + 32$

Convert the following:

9. 4.13 liters = .00413 kiloliters
10. 0.23 kilometers = 23000 centimeters .23000
11. 8 meters = 8,000,000,000 nanometers 8.000000000

Round the following to the stated place value

12. 2.149 (tenths) 2.1
13. 9,509 (tens) 9510
14. 1.427 (hundredths) 1.43
15. 42.67 (whole) 43

Write in number form

16. 2.41×10^6 2,410,000
17. 1.2×10^{-5} .000012
18. 3.7×10^{-3} .0037
19. 4.5×10^4 45000

Write in scientific notation

20. 67,100,000 6.71×10^7

21. 0.000478 4.78×10^{-4}

22. 2,930,000,000 2.93×10^9

23. 0.00078 7.8×10^{-4}

Evaluate and write in scientific notation

24. $(2.7 \times 10^6)(4.5 \times 10^{-3})$ 1.215×10^4 12150

25. $\frac{5.8 \times 10^8}{1.7 \times 10^3}$ 3.4×10^5 341176.4706

26. State the accuracy of the following measurement devices

a. a scale that weighs to the nearest 50 lbs

$50/_2$ ± 25

b. a satellite that measures distance to the nearest 10 miles

$\frac{10}{2}$ ± 5

27. Sam has a tape that measures to the nearest inch. His measurement of the length of his bedroom is 38 inches. What is the range of the actual length of his bedroom?

$\pm .5$ 37.5 – 38.5

28. Find the boundary values for the actual area of a room given the dimensions measured are 38 ft by 42 ft. $\pm .5$

low dimensions 37.5 x 41.5 low area 1556.25

high dimensions 38.5 x 42.5 high area 1636.25

29. Find the volume of a cylinder given the radius is 4.7 and the height is 12.6 $\pm .05$ $V = \pi r^2 h$

low dimensions 4.65 , 12.55 low volume 852.51

high dimensions 4.75 , 12.65 high volume 896.66

30. Find the error and percentage of error of the following situation; Sally estimated the area of her room to be 1400 ft^2 when in reality it is 1325 ft^2

error: 1400 − 1325 = 75

% of error: $\frac{75}{1325} \times 100$ 5.7%

31. Bailey quickly measures a box and gets the dimensions 36 cm by 48 cm by 19 cm. The actual dimensions are 35.7 cm by 48.3 cm by 18.6 cm

a. Calculate the actual volume of the box 32072.1666

b. Calculate the volume Bailey got with her dimensions 32832

c. Find the rounding error in the calculation 759.34

d. What percentage of error was made? $\frac{759.34}{32072.1666} \times 100$

2.37%

32. Fill in the fractions below with the conversions needed.

$$\frac{28 \text{ in}}{1 \text{ sec}} \cdot \frac{1 \text{ ft}}{12 \text{ in}} \cdot \frac{1 \text{ miles}}{5280 \text{ ft}} \cdot \frac{60 \text{ sec}}{1 \text{ min}} \cdot \frac{60 \text{ min}}{1 \text{ hour}}$$

What rate are you left with?

miles/hr $\frac{(28 \cdot 60 \cdot 60)}{(12 \cdot 5280)} =$

33. Convert 37 inches/sec to miles/hour

$$\frac{37 \text{ in}}{1 \text{ sec}} \cdot \frac{1 \text{ ft}}{12 \text{ in}} \cdot \frac{1 \text{ mi}}{5280 \text{ ft}} \cdot \frac{60 \text{ sec}}{1 \text{ min}} \cdot \frac{60 \text{ min}}{1 \text{ hr}}$$

$$\frac{(37 \times 60 \times 60)}{(12 \times 5280)} = 2.1 \text{ miles/hr}$$

34. A certain submersible pump can produce 20 gallons an hour. How many pints is that per second?

$$\frac{20 \text{ gal}}{1 \text{ hr}} \cdot \frac{1 \text{ hr}}{60 \text{ min}} \cdot \frac{1 \text{ min}}{60 \text{ sec}} \cdot \frac{4 \text{ qt}}{1 \text{ gal}} \cdot \frac{2 \text{ pt}}{1 \text{ qt}}$$

$$\frac{(20 \times 4 \times 2)}{(60 \times 60)} = .04 \text{ pt/sec}$$