Score:
_____/_____
_____%

Intermediate 2 Unit 6 Review

Write each number in scientific notation.

1. 67,000
2. -5,401,000,000
3. 0.0000856
4. 0.00339

Write each in standard form.

5. 6.302×10^5
6. 8.002×10^{-4}
7. 8.14×10^0
8. -6.22×10^{-3}

Use scientific notation to evaluate each expression. Write your answer in scientific notation and standard form.

9. $(4.7 \times 10^5)(2.8 \times 10^3)$
10. $(7.5 \times 10^{11})(3 \times 10^5)$
11. $\dfrac{2.8 \times 10^2}{0.7 \times 10^6}$
12. $\dfrac{1.8 \times 10^{-14}}{2.4 \times 10^6}$

Find the value of the expressions below in scientific notation

13. $(4.7 \times 10^5) - (2.8 \times 10^3)$
14. $(2.451 \times 10^9) + (9.36 \times 10^{10})$
15. $(8.114 \times 10^{12}) + (9.98 \times 10^{13})$

Solve the following problems. Leave your answers in scientific notation, include units if necessary

16. The world population is about 7.4×10^9. The population of Canada is about 3.516×10^7. About how many times larger is the world population than that of Canada?

17. The area of Canada, the United States and Mexico are $3.855 \times 10^6 \text{ mi}^2$, $3.806 \times 10^6 \text{ mi}^2$ and $7.616 \times 10^5 \text{ mi}^2$ respectively. Find the total area for Canada, the United States and Mexico.

18. A technology company manufactures flash drives that each store approximately 8.58×10^9 bytes of data. Each day, the company manufactures 7.2×10^3 of these flash drives. How much data could be stored on the flash drives manufactured in one day?

19. In 2015, the population of China was approximately 1.40159×10^9 people. The population of China in 1960 was approximately 6.6058×10^8 people. How many more people lived in China in 2015 than in 1960?

20. The debt of the United States is 1.8×10^{13} dollars. The population of the United States is about 300,000,000 people. If each person were to pay his or her fair share of the debt, how much would that be per person?

Find the square root (round to the tenths place if necessary)**:**   **Find the cube root** (round to the tenths place if necessary)**:**

21. $-\sqrt{\dfrac{16}{81}}$ 22. $\sqrt{-256}$ 23. $\pm\sqrt{49}$ 24. $\sqrt[3]{27}$ 25. $\sqrt[3]{-216}$ 26. $-\sqrt[3]{1000}$

Solve each equation

27. $b^2 = 100$ 28. $\dfrac{25}{36} = n^2$ 29. $\sqrt{c} = 9$ 30. $a^3 = 64$ 31. $343 = g^3$

Estimate to the nearest integers. (Give the integer above and the integer below the root)

32. $\sqrt{43}$ 33. $\sqrt{390}$ 34. $\sqrt{23.9}$ 35. $\sqrt[3]{60}$ 36. $\sqrt[3]{320}$

Simplify the radicals.

37. $\sqrt{18}$ 38. $\sqrt{75}$ 39. $\sqrt{42}$ 40. $\sqrt{45}$ 41. $\sqrt{48}$

Order the set from least to greatest. Don't forget to show work.

42. $\{\sqrt{15}, \ 200\%, \ \sqrt[3]{50}, \ 2.1, \ 2\frac{1}{9}\}$

Complete the next twenty problems in 2 minutes, without a calculator.

1. $9^2 =$ _____

2. $13^2 =$ _____

3. $15^2 =$ _____

4. $\sqrt{16} =$ _____

5. $\sqrt{25} =$ _____

6. $20^2 =$ _____

7. $18^2 =$ _____

8. $\sqrt{49} =$ _____

9. $14^2 =$ _____

10. $\sqrt{289} =$ _____

11. $\sqrt{100} =$ _____

12. $11^2 =$ _____

13. $1^2 =$ _____

14. $\sqrt{144} =$ _____

15. $6^2 =$ _____

16. $2^2 =$ _____

17. $\sqrt{361} =$ _____

18. $\sqrt{64} =$ _____

19. $3^2 =$ _____

20. $\sqrt{256} =$ _____