

1. Use digits to write the number four hundred billion, three hundred seventy-one thousand, thirty-three. **400 000 371 033**

2. The following number is written in expanded form. Write it in standard form. **20 040 216**

$$2 \cdot 10\,000\,000 + 4 \cdot 10\,000 + 2 \cdot 100 + 1 \cdot 10 + 6 \cdot 1$$

3. Rounding.

(a) Round 12 730 295 to the nearest thousand. **12 730 000**

(b) Round 12 730 295 to the nearest million. **13 000 000**

4. The sides of a rectangle are 15 mi and 28 mi long.

(a) Find the perimeter of the rectangle. Include units in your answer.  **$P = 86$  mi**

(b) Find the perimeter and area of the rectangle. Include units in your answer.  **$A = 420$  mi<sup>2</sup>**

5. Consider the following numbers: 720, 4281, 125, 222, 555 555

(a) Find all numbers from the list that are divisible by 5. **720, 125, 555 555**

(b) Find all numbers from the list that are divisible by 3. **720, 222, 555 555**

(c) Find all numbers from the list that are divisible by 15. **720, 555 555**

6. Find the sum of the prime numbers between 20 and 35.  **$23 + 29 + 31 = 83$**

7. List all the factors of 64. **1, 2, 4, 8, 16, 32, 64**

8. Use the prime factorization method to find the least common multiple of 180 and 66. **1980**

9. Perform the following operations. Show all steps.

(a)  $-2 + 6 + (-10) =$   **$-6$**

(b)  $-3 + (-4) + 7 =$   **$0$**

(c)  $3 + (-2) + 9 + (-8) =$   **$2$**

10. Let  $x = -1$ ,  $y = -2$ , and  $z = 5$ . Evaluate each of the following expressions.

(a)  $2z - 2 + x + y =$   **$5$**

(b)  $(z + x + y)^2 + 3(x + y + 2z) - 7 =$   **$18$**

(c)  $\frac{x + y}{x - y} =$   **$-3$**

(d)  $\frac{2 - z}{z - 2} =$   **$-1$**

11. Insert a  $<$  or a  $>$  sign between the numbers given to create a true statement.

(a)  $-2 > -12$

(b)  $-12 < -2$

12. Solve each of the following equations. Make sure to check your solutions.

(a)  $x \cdot 2 = 72$     $36$

(b)  $x + 31 = 68$     $37$

(c)  $x - 15 = 90$     $105$

(d)  $\frac{x}{7} = 4$     $28$

13. Is the number 11 a solution of the equation  $x^2 - 72 + x = 6(x - 1)$    **yes,  $60 = 60$**