

LESSON

5

Exponents and Roots**Practice A: Squares and Square Roots****Find the two square roots of each number.**

1. 16

2. 49

3. 1

4. 25

5. 100

6. 4

7. 81

8. 64

Simplify each expression.

9. $\sqrt{8+1}$

10. $\sqrt{7-6}$

11. $\sqrt{18-2}$

12. $\sqrt{31+5}$

13. $\sqrt{36} + 10$

14. $15 - \sqrt{25}$

15. $\sqrt{49} - \sqrt{4}$

16. $\sqrt{16} + 9$

17. $\sqrt{\frac{64}{16}}$

18. $5\sqrt{9}$

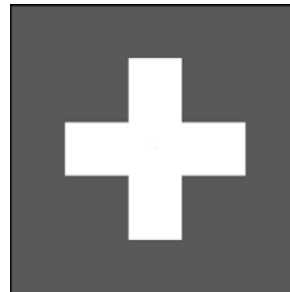
19. $\sqrt{\frac{100}{4}}$

20. $-3\sqrt{81}$

Switzerland's flag is a square, unlike other flags that are rectangular.

21. If the flag of Switzerland has an area of 81 ft^2 , what is the length of each of its sides? (Hint: $s = \sqrt{A}$)

22. If the lengths of the sides of a Switzerland flag are 10 ft, what is the area of the flag? (Hint: $A = s^2$)



$$2. (5.2 \times 10^{12}) \times (3.9 \times 10^{13})$$

$$(5.2 \times 3.9) \times (10^{12} \times 10^{13})$$

$$20.3 \times (10^{12} \times 10^{13})$$

$$20.3 \times 10^{25}$$

$$2.03 \times 10^{26}$$

Challenge

Sample answers are given.

- 13 years 4 months 5 days
- 4.872×10^3 days
- 1.16928×10^5 hours
- 7.01568×10^6 minutes
- 4.209408×10^8 seconds
- 4.209408×10^{17} nanoseconds

Problem Solving

- 2.33×10^3 times 2. 1.61×10^{10} mi
- 3.533×10^6 sq mi 4. $\$4.07 \times 10^9$
- A 6. G
- B 8. J

Reading Strategies

- B; 1.18×10^7
- C; 8.3116×10^{11}
- A; 4.75×10^{20}

Puzzles, Twisters & Teasers

- $(6.4 \times 10^4) + (2.1 \times 10^4) = 8.5 \times 10^4$
- $(5.8 \times 10^7) - (2.2 \times 10^5) = 5.778 \times 10^7$
- $\frac{3.75 \times 10^5}{5 \times 10^2} = 7.5 \times 10^2$
- $(2.95 \times 10^2) \times (4.3 \times 10^6) = 1.2685 \times 10^9$
- $(2.0 \times 10^{-2}) + (5.1 \times 10^2) = 5.1002 \times 10^2$
- $(3.0 \times 10^7) \times (2.2 \times 10^{-5}) = 6.6 \times 10^2$

ANSWER TO THE RIDDLE **SUM FUN**

Answers for Lesson 5

Practice A

- | | |
|------------|-------------------------|
| 1. 4, -4 | 2. 7, -7 |
| 3. 1, -1 | 4. 5, -5 |
| 5. 10, -10 | 6. 2, -2 |
| 7. 9, -9 | 8. 8, -8 |
| 9. 3 | 10. 1 |
| 11. 4 | 12. 6 |
| 13. 16 | 14. 10 |
| 15. 5 | 16. 13 |
| 17. 2 | 18. 15 |
| 19. 5 | 20. -27 |
| 21. 9 ft | 22. 100 ft ² |

Practice B

- | | |
|------------|------------|
| 1. 6, -6 | 2. 9, -9 |
| 3. 7, -7 | 4. 10, -10 |
| 5. 8, -8 | 6. 11, -11 |
| 7. 5, -5 | 8. 12, -12 |
| 9. 7 | 10. 9 |
| 11. 10 | 12. 5 |
| 13. 26 | 14. 30 |
| 15. 5 | 16. 27 |
| 17. 3 | 18. 2 |
| 19. 2 | 20. 18 |
| 21. 755 ft | 22. 25 in. |

Practice C

- | | |
|-------------------|------------|
| 1. 15, -15 | 2. 24, -24 |
| 3. 19, -19 | 4. 25, -25 |
| 5. 20, -20 | 6. 27, -27 |
| 7. 32, -32 | 8. 50, -50 |
| 9. $\frac{1}{3}$ | 10. 6 |
| 11. 5 | 12. 7 |
| 13. $\frac{1}{2}$ | 14. 7 |
| 15. 36 | 16. -96 |