

Lesson 85 • Surface Area of Cylinders and Prisms

Power Up

- Facts
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- Problem Solving

New Concepts

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Written Practice

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Facts

Simplify.

$2x + x$	$2x - x$	$(2x)(x)$	$\frac{2x}{x} = 2$	$\frac{x^2}{x} = x$
$3x$	x	$2x^2$		
$8xy + 2xy$	$8xy - 2xy$	$(8xy)(2xy)$	$\frac{8xy}{2xy} = 4$	$\frac{8x^2y}{2y} = 4x^2$
$10xy$	$6xy$	$16x^2y^2$		
$x + y + x$	$x + y - x$	$(x)(y)(-x)$	$\frac{xy}{x} = y$	$\frac{x^2y^3}{x^2y} = y^2$
$2x + y$	y	$-x^2y$		
$4x + x + 2$	$4x - x - 2$	$(4x)(-x)(-2)$	$\frac{-4x}{2x} = -2$	$\frac{4x^3}{2x^2} = 2x$
$5x + 2$	$3x - 2$	$8x^2$		

Written Practice

1. 15
2. a. 7.5 minutes per mile
b. 8 miles per hour
3. 3,500,000; Sample: I used $\frac{1}{6}$ or $16\frac{2}{3}\%$ because $16\frac{2}{3}\%$ would be a repeating decimal.
4. a. 36°
b. 5π in. or about 15.7 in.
5. 1×10^{-3}
6. a. $x = 6, y = 6$
b. $\angle F$
c. $\frac{3}{2}$ or 1.5

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Written Practice*continued*

7. Although the frame will not lay flat in the box it will fit at an angle. We can place a 9-inch side against a 10-inch side of the box. The Pythagorean Theorem shows that the other end of the frame rests about 5 inches up the other side of the box: $5^2 + 12^2 = 13^2$.
8. $4x + 14$
9. $x < 0$
- 
10. 242 cm^2
11. $7x^2 - 35x$
12. $\frac{3}{10}$
13. $10\sqrt{5}$
14. 20
15. a. 6 Possible Combinations
- | | | | | | | |
|-------|---|---|---|---|---|---|
| Red | 4 | 5 | 5 | 6 | 6 | 6 |
| Green | 6 | 5 | 6 | 4 | 5 | 6 |
- b. $\frac{1}{6}$
16. C

Written Practice*continued*

17. $\frac{440 \text{ ft}}{2 \text{ min}} \cdot \frac{1 \text{ mi}}{5280 \text{ ft}} \cdot \frac{60 \text{ min}}{1 \text{ hr}} = 2.5 \text{ mi/hr}$

18. (2, 3)

19. 108 ft²; Possible answer: The shape of the wall is a trapezoid. I found the area of the trapezoid (120 ft²) and subtracted the area of the window (12 ft²).

20. scale 1 in. = 10 ft; $2\frac{1}{2}$ in.

21. $x = 9$

22. $x = \frac{3}{2}$

23. $x = 1\frac{1}{10}$ or 0.1

24. $x = 5, -5$

25. See student answers. The simplest is a reflection in the y-axis.

