Warm Up 86

1. line segment, endpoints
2. a right angle
3. B

Lesson Practice 86

a. $\frac{16}{3}$ or $5\frac{1}{3}$

b. $7y = 2(4 - y)$; $y = \frac{8}{9}$

c. $x = 8.5$

d. 2 ft 10 in.

Practice 86

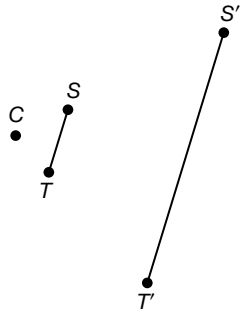
1. 3

2. 94°

3. Yes; If you just consider the areas of the bases, the cone has only one base and the cylinder has two bases, all three having equal areas. The lateral surface area for the cone is also less than the lateral surface area for the cylinder. If you imagine taking the lateral surface of the cylinder and "wrapping" it to create a cone, there would be areas of overlap.

4. 7

5. Sample: Subtract the angle measure of that sector from 360° and divide by 360°.

6. 

7. $m\angle D = 20°$, $m\angle E = 160°$, $m\angle F = 20°$ $m\angle G = 160°$

8. $\theta_1 = 55°$, $\theta_2 = 35°$

9. $\langle 0, 0 \rangle$; opposite vectors

10. The slope between A and B is $-\frac{1}{2}$, which is equal to the slope between B and C and the slope between A and C.

11. 56 cm

12. 452 in^3

13. 133 ft

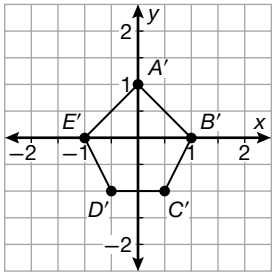
14. They are congruent.

15. **B**

16. $2(3 + 2x) = 6x$; $x = 3$

17. 72°

18. $m\angle X = 118°$,
$m\angle Y = 19°$, $m\angle Z = 43°$

19. 

20. $x = 13\frac{\sqrt{3}}{3}$, $y = 26\frac{\sqrt{3}}{3}$

21. By the Reflexive Property of Congruence, $\overset{\frown}{CD} \cong \overset{\frown}{CD}$. The measure of an angle that is outside a circle is equal to half the difference of the intercepted arcs, so $m\angle A = \frac{1}{2}(m\overset{\frown}{CD} - m\overset{\frown}{FE})$ and $m\angle B = \frac{1}{2}(m\overset{\frown}{CD} - m\overset{\frown}{HG})$. Solve for $m\overset{\frown}{FE}$ and $m\overset{\frown}{HG}$ to get $m\overset{\frown}{FE} = m\overset{\frown}{CD} - 2(m\angle A)$ and $m\overset{\frown}{HG} = m\overset{\frown}{CD} - 2(m\angle B)$. Since $\angle A \cong \angle B$, substitute to find that $m\overset{\frown}{HG} = m\overset{\frown}{CD} - 2(m\angle A)$. Therefore, by the Transitive Property of Equality, $m\overset{\frown}{FE} = m\overset{\frown}{HG}$.

22. 380.6 meters

23. 24 cm

24. 1200 cm^3

25. Today sandwiches are 25% off.

26. $5(3 - 2y) = (y - 4)(4)$; $y = \frac{31}{14}$

27. 79 m^2

28. If folded, the pentagons will overlap. It could be fixed by moving one of the pentagons to the opposite edge of the rectangle it is attached to.

29. 26 cm

30. B