Answers for Lesson 11-6 Exercises

1. total produced

2. amount of growth

3. miles

4. distance traveled

5. total price

6. ≈ 270 units^2

7. 100 units^2

8. 480 units^2

9. $A = \sum_{n=1}^{2} 1f(a_n)$

a. 0.5 units^2

b. 2.5 units^2

10. $A = \sum_{n=1}^{2} 1f(a_n)$

a. 5 units^2

b. 9 units^2

11. $A = \sum_{n=1}^{2} 1g(a_n)$

a. 3 units^2

b. 7 units^2

12. $A = \sum_{n=1}^{2} 1f(a_n)$

a. 3 unit^2

b. 7 units^2

13. $A = \sum_{n=1}^{2} 1f(a_n)$

a. $10\frac{2}{3}$ units^2

b. $13\frac{1}{3}$ units^2

14. $A = \sum_{n=1}^{2} 1h(a_n)$

a. 5 units^2

b. 25 units^2

15. $A = \sum_{n=1}^{2} 1f(a_n)$

a. 6.75 units^2

b. 7.75 units^2

16. $A = \sum_{n=1}^{2} 1h(a_n)$

a. 5 units^2

b. 9 units^2

17. $A = \sum_{n=1}^{2} 1f(a_n)$

a. 5 units^2

b. 9 units^2

18. $1.\overline{6}$ units^2

19. 2.5 units^2

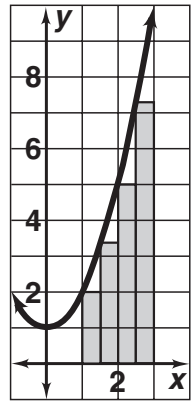
20. 0.25 units^2

21. 3.3 units^2

22. $2.\overline{3}$ units^2

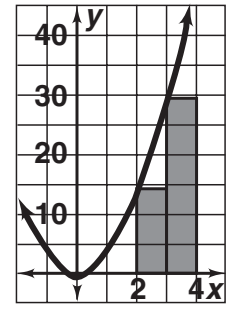
23. 3.25 units^2

24.



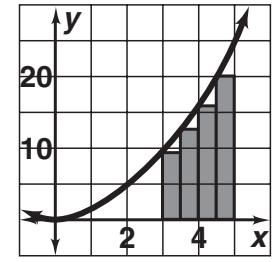
8.75 units^2

25.



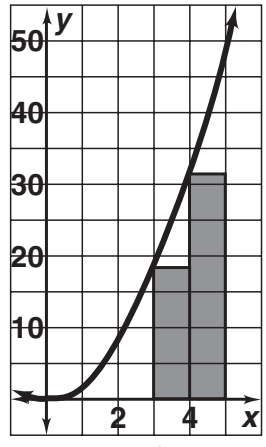
43 units^2

26.



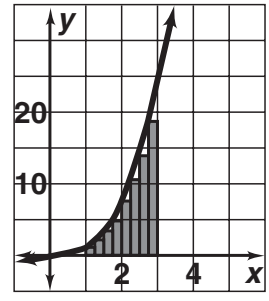
28.75 units^2

27.



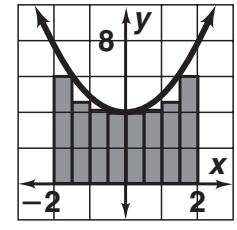
50 units^2

28.



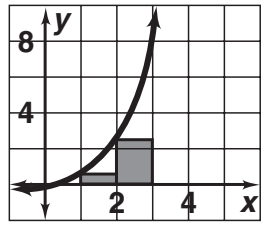
16.875 units^2

29.



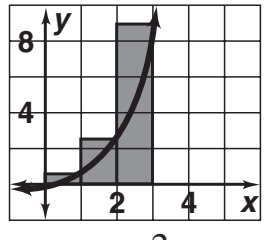
19.5 units^2

30. a.



b. 3 units^2

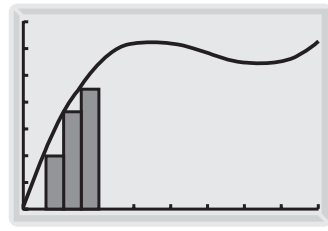
c.



12 units^2

d. 7.5 units^2; the mean best approximates the area because it is between the other measures known to be larger and smaller than the actual value.

31. a. Answers may vary. Sample:



≈0.37 miles

b. Answers may vary. Sample: Using inscribed rectangles will result in an estimate smaller than the actual number.

32. 9 units^2 **33.** 7.5 units^2 **34.** 15 units^2

35. ≈3.46 units^2 **36.** ≈8.05 units^2 **37.** 9.75 units^2

38. 10 units^2 **39.** 2.5 units^2 **40.** 9.9 units^2

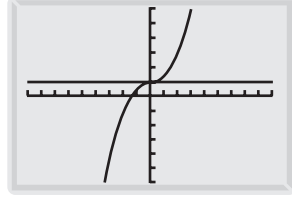
41. Check students' work.

42. a. 17.5 units^2

b. 14 units^2

c. The estimate in (a) is closer to the actual area because there is less area between the curve and the rectangles when more rectangles are used.

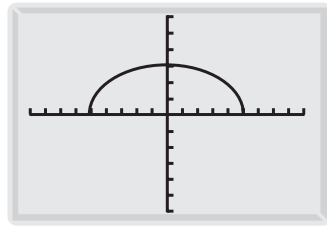
43. a.



b. The area under both curves is the same, 3 units^2, over the interval $-1.5 \leq x \leq 1.5$; this is true because the amount of area *above* $y = \frac{1}{4}x^3 + 1$ and *below* $y = 1$ on the left side of the y-axis is equal to the area *below* $y = \frac{1}{4}x^3 + 1$ and *above* $y = 1$ on the right side of the y-axis.

44. 6 units^2

45. a. $y = \sqrt{9 - \frac{9x^2}{25}}$

b. 

≈23.56 units^2

c. ≈47.12 units^2

d. Check students' work.