pp. 313-315 #1, 3, 4, 9-17, 51-53

1. A rational number can be written as the ratio of two integers. An irrational number cannot be written as the ratio of two integers.

3. all rational and irrational numbers; *Sample answer:*
$$-2, \frac{1}{8}, \sqrt{7}$$

4. $\sqrt{8}$; $\sqrt{8}$ is irrational and the other three numbers are rational.

9. whole, integer, rational

10. natural, whole, integer, rational

11. irrational

12. integer, rational

13. rational

14. natural, whole, integer, rational

15. irrational

16. irrational

17. 144 is a perfect square. So, $\sqrt{144}$ is rational.

51. 40 m

52. 24 in.

53. 9 cm

pp. 313-315 #2, 5, 20-24, 27-29, 37-39

2. 32 is between the perfect squares 25 and 36, but is closer to 36, so $\sqrt{32} \approx 6$.

5. yes

20. a. 7

   b. 6.8

21. a. 26

   b. 26.2

22. a. -8

   b. -7.8

23. a. -10

   b. -10.2

24. a. 3

   b. 2.6

27. $\sqrt{15}$; $\sqrt{15}$ is positive and -3.5 is negative.

28. $\sqrt{133}$; $\sqrt{133}$ is to the right of $10\frac{3}{4}$.

29. $\frac{2}{3}$; $\frac{2}{3}$ is to the right of $\sqrt{\frac{16}{81}}$.

37. 8.5 ft

38. 8.9 cm

39. 20.6 in.