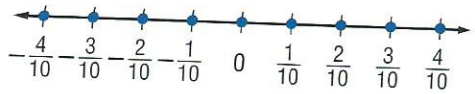
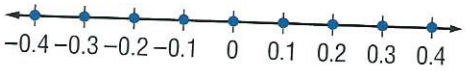
Just as positive and negative integers can be represented on a number line, so can positive and negative rational numbers.





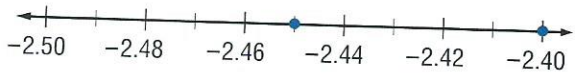
You can use a number line to help you compare and order negative rational numbers.

EXAMPLES Compare Negative Rational Numbers

Replace each ● with <, >, or = to make a true sentence.

4 **−2.4 ● −2.45**

Graph the decimals on a number line.



Since −2.4 is to the right of −2.45, $-2.4 > -2.45$.

5 $-\frac{7}{8} \bullet -\frac{6}{8}$

Since the denominators are the same, compare the numerators.

$-7 < -6$, so $-\frac{7}{8} < -\frac{6}{8}$.

CHECK Your Progress

Replace each ● with <, >, or = to make a true sentence.

i. $-\frac{9}{16} \bullet -\frac{12}{16}$ j. $-3.15 \bullet -3.17$ k. $-\frac{7}{10} \bullet -\frac{4}{5}$

Your Understanding

Replace each ● with <, >, or = to make a true sentence.

1. $\frac{1}{2} \bullet \frac{5}{12}$ 2. $\frac{9}{25} \bullet \frac{3}{10}$ 3. $\frac{3}{11} \bullet 0.25$ 4. $3\frac{5}{8} \bullet 3.625$

5. $-\frac{10}{18} \bullet -\frac{16}{18}$ 6. $-\frac{4}{5} \bullet -\frac{7}{10}$ 7. $-0.\overline{6} \bullet -0.\overline{67}$ 8. $-2.\overline{4} \bullet -2.42$

9. **OCEANOGRAPHY** The tide heights for several cities are shown in the table. Order the cities from least tide height to greatest.

City	Tide Height (ft)	City	Tide Height (ft)
Baltimore, MD	$1.\overline{6}$	Key West, FL	$1.8\overline{3}$
Galveston, TX	$1\frac{5}{12}$	Mobile, AL	1.5
Gulfport, MS	$1\frac{1}{6}$	Washington, DC	$1\frac{17}{20}$

Exercises

HOMEWORK HELP	
For Exercises	See Examples
10, 11	1
12–15	2
16, 17	3
18–23	4
24–29	5

Replace each ● with <, >, or = to make a true sentence.

10. $\frac{2}{3}$ ● $\frac{7}{9}$

11. $\frac{3}{5}$ ● $\frac{5}{8}$

12. 0.5 ● $\frac{7}{12}$

13. 0.75 ● $\frac{11}{15}$

14. $6\frac{15}{32}$ ● 6.5

15. $2\frac{21}{30}$ ● 2.7

16. **CARPENTRY** Rondell has some drill bits marked $\frac{7}{16}$, $\frac{3}{8}$, $\frac{5}{32}$, $\frac{9}{16}$, and $\frac{1}{4}$. If the are all measurements in inches, how should he arrange them if he wants them from least to greatest?

17. **PHOTOGRAPHY** Cameras often have multiple shutter speeds. Some commo shutter speeds in seconds are $\frac{1}{125}$, $0.0\overline{6}$, $\frac{1}{60}$, 0.125, 0.004, and $\frac{1}{4}$. List these speeds in order from the fastest to the slowest.

Replace each ● with <, >, or = to make a true sentence.

18. -4.8 ● -4.6

19. -5.25 ● -5.24

20. -22.9 ● -22.09

21. -2.07 ● -2.6

22. -4.3 ● -4.37

23. -2.8 ● -2.86

24. $-\frac{3}{11}$ ● $-\frac{1}{11}$

25. $-\frac{4}{10}$ ● $-\frac{7}{10}$

26. $-\frac{1}{6}$ ● $-\frac{1}{12}$

27. $-\frac{3}{5}$ ● $-\frac{7}{15}$

28. $-1\frac{3}{8}$ ● $-1\frac{2}{3}$

29. $-5\frac{4}{7}$ ● $-5\frac{3}{5}$

Order each set of rational numbers from least to greatest.

30. $-3\frac{2}{5}$, -3.68, -3.97, $-4\frac{3}{4}$

31. -2.9, -2.95, $-2\frac{9}{11}$, $-2\frac{13}{14}$

32. **STATISTICS** If you order a set of numbers from least to greatest, the middle number is the *median*. Find the median of 20.6°C, −18.5°C, −31°C, −18°C, and 20.2°C.

33. **ANALYZE TABLES** The table shows the regular season records of five college baseball teams during a recent season. Which team had the best record? (*Hint:* Divide the number of games won by the number of games played.)

Team	Games Won	Games Played
University of Alabama	29	55
University of Notre Dame	51	63
University of Southern California	24	56
Florida State University	45	68
Rice University	46	60

34. **ATTENDANCE** The school play was attended by $\frac{5}{6}$ of the 6th grade, $\frac{3}{4}$ of the 7th grade, and $\frac{4}{5}$ of the 8th grade. Which grade has the greatest part of its class attend the play?

EXTRA PRACTICE
See pages 697, 729.
Math Online
Self-Check Quiz at tx.msmath3.com

H.O.T. Problems

35. **NUMBER SENSE** Are the fractions $\frac{5}{11}$, $\frac{5}{12}$, $\frac{5}{13}$, and $\frac{5}{14}$ arranged in order from least to greatest or from greatest to least? Explain.

36. **OPEN ENDED** Name two fractions that are less than $\frac{1}{2}$ and two fractions that are greater than $\frac{1}{2}$.

37. **CHALLENGE** Are there any rational numbers between $0.\overline{2}$ and $\frac{2}{9}$? Explain.

38. **WRITING IN MATH** Explain why 0.28 is less than $0.\overline{28}$.

TEST PRACTICE

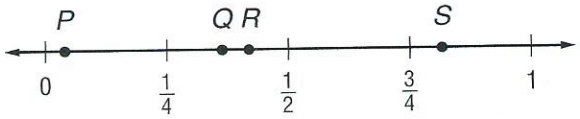
39. Which fraction is between $-\frac{3}{4}$ and $-\frac{2}{3}$?

A $-\frac{1}{2}$ C $-\frac{5}{7}$

B $-\frac{3}{5}$ D $-\frac{7}{8}$

40. **GRIDDABLE** If an airplane flies at an average speed of 486 miles per hour, how many miles will it travel in $3\frac{2}{3}$ hours?

41. Which point on the number line below is the coordinate of 0.425?



F Point P

G Point Q

H Point R

J Point S

Spiral Review

42. **HOCKEY** The sheet of ice for a hockey rink is created in two layers. First an $\frac{1}{8}$-inch layer of ice is made for the lines to be painted on. Then a $\frac{6}{8}$-inch layer of ice is added on top of the painted layer, for a total thickness of $\frac{7}{8}$ inch. Write the total thickness of the ice as a decimal. (Lesson 2-1)

Solve each equation. Check your solution. (Lesson 1-10)

43. $\frac{y}{7} = 22$

44. $4p = -60$

45. $20 = \frac{t}{15}$

46. $81 = -3d$

47. $\frac{a}{6} = -108$

48. $-4n = -96$

49. **WEATHER** After the temperature had fallen 10°F, the temperature was −8°F. Write and solve a subtraction equation to find the starting temperature. (Lesson 1-9)

GET READY for the Next Lesson

PREREQUISITE SKILL **Multiply.** (Lesson 1-6)

50. $-4(-7)$

51. $8(-12)$

52. $(-3)17$

53. $23(-5)$