

2nd Quarter

Mad Minute Averages					
Name		Date			
Wk of 10-10	week of 10-17	Wk of 10-24	Wk of 10-31		
Mon. 23 = 58%	Mon. 21 = 53%	Mon. 20 = 50%	Mon. 30 = 75%		
Tues. 24 = 60%	Tues. 23 = 58%	Tues. Ch. 3 Test	Tues. Ch. 4 Quiz		
Wed. 28 = 70%	Wed. 22 = 55%	Wed. 21 = 53%	Wed. 29 = 73%		
Thurs. Did not do	Thurs. 26 = 65%	Thurs. 20 = 50%	Thurs. 31 = 78%		
Fri. Did not do	Fri. 20 = 50%	Fri. 21 = 53%	Fri. 30 = 75%		
Wk of 11-7	Wk of 11-14	Wk of 11-28	Wk of 12-5		
Mon. 32 = 80%	Mon. 30 = 75%	Mon. 28 = 70%	Mon. 26 = 65%		
Tues. 31 = 78%	Tues. 28 = 70%	Tues. 29 = 73%	Tues.		
Wed. Ch. 4 Test	Wed. 32 = 80%	Wed. 27 = 68%	Wed.		
Thurs. 32 = 80%	Thurs. Ch 5 to 5-4 Quiz	Thurs. Ch. 5 Quiz	Thurs.		
Fri. No School	Fri. 30 = 75%	Fri. 1/2 Day	Fri.		
Mon.	Tues.	Wed.	Thurs.	Fri.	
Mon.	Tues.	Wed.	Thurs.	Fri.	
Week	Average	Parent Signature	Week	Average	Parent Signature
one	25 = 63%		six	30 = 75%	
two	23 = 58%		seven	28 = 70%	
three	21 = 53%		eight	26 = 65%	
four	30 = 75%		nine		
five	32 = 80%		ten		

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5-1 Study Guide and Intervention

Greatest Common Factor

The greatest common factor (GCF) of two or more numbers is the greatest common factor of the numbers. To find the GCF, you can make a list or use prime factors.

EXAMPLE 1: Find the GCF of 12 and 30 by making a list.

List the factors of 12 and 30.
 12: 1, 2, 3, 4, 6, 12
 30: 1, 2, 3, 5, 6, 10, 15, 30
 The common factors are 1, 2, 3, and 6. The greatest is 6. The GCF of 12 and 30 is 6.

EXAMPLE 2: Find the GCF of 18 and 27 by using prime factors.

Write the prime factorizations of 18 and 27.

18: $2 \cdot 3 \cdot 3$
 27: $3 \cdot 3 \cdot 3$

The common prime factors are 3 and 3. So, the GCF of 18 and 27 is $3 \cdot 3$ or 9.

EXERCISES

Find the GCF of each set of numbers by making a list.

- 8 and 12: $\begin{array}{r} 8 \\ 2 \end{array} \begin{array}{r} 12 \\ 3 \end{array}$ GCF = 4
- 10 and 15: $\begin{array}{r} 10 \\ 5 \end{array} \begin{array}{r} 15 \\ 3 \end{array}$ GCF = 5
- 81 and 27: $\begin{array}{r} 81 \\ 3 \end{array} \begin{array}{r} 27 \\ 3 \end{array}$ GCF = 27

Find the GCF of each set of numbers by using prime factors.

- 15 and 20: $\begin{array}{r} 15 \\ 3 \end{array} \begin{array}{r} 20 \\ 4 \end{array}$ GCF = 5
- 6 and 12: $\begin{array}{r} 6 \\ 2 \end{array} \begin{array}{r} 12 \\ 3 \end{array}$ GCF = 6
- 28 and 42: $\begin{array}{r} 28 \\ 7 \end{array} \begin{array}{r} 42 \\ 6 \end{array}$ GCF = 14

Find the GCF of each set of numbers.

- 21 and 9: $\begin{array}{r} 21 \\ 3 \end{array} \begin{array}{r} 9 \\ 3 \end{array}$ GCF = 9
- 15 and 7: $\begin{array}{r} 15 \\ 3 \end{array} \begin{array}{r} 7 \\ 7 \end{array}$ GCF = 1
- 30 and 45: $\begin{array}{r} 30 \\ 3 \end{array} \begin{array}{r} 45 \\ 5 \end{array}$ GCF = 15
- 44 and 55: $\begin{array}{r} 44 \\ 4 \end{array} \begin{array}{r} 55 \\ 5 \end{array}$ GCF = 11
- 54 and 81: $\begin{array}{r} 54 \\ 6 \end{array} \begin{array}{r} 81 \\ 9 \end{array}$ GCF = 27
- 36, 20, and 18: $\begin{array}{r} 36 \\ 4 \end{array} \begin{array}{r} 20 \\ 4 \end{array} \begin{array}{r} 18 \\ 3 \end{array}$ GCF = 2
- 35 and 7: $\begin{array}{r} 35 \\ 5 \end{array} \begin{array}{r} 7 \\ 7 \end{array}$ GCF = 7

NAME _____ DATE _____ PERIOD _____
5-1 Practice: Word Problems
 Greatest Common Factor

- WAREHOUSE** A warehouse has three shelves that can hold 8, 12, or 16 skateboards. Each shelf has sections holding the same number of skateboards. What is the greatest number of skateboards that can be put in a section? Explain.
- FRUIT** Mei has 15 oranges, 9 peaches, and 18 pears. She wants to put all of the fruit into decorative baskets. Each basket must have the same number of pieces of fruit in it. Without mixing fruits, what is the greatest number of pieces of fruit Mei can put in each basket? Explain.
- SHIPPING** Oscar needs to ship 14 rock CDs, 12 classical CDs, and 8 pop CDs. He can pack only one type of CD in each box, and he must pack the same number of CDs in each box. What is the greatest number of CDs Oscar can pack in each box? Explain.
- GARDENING** Jill wants to put 45 sunflower plants, 61 corn plants, and 53 tomato plants in her garden. If she puts the same number of plants in each row and if each row has only one type of plant, what is the greatest number of plants Jill can put in one row? Explain.
- MONEY** The list shows the amounts of money the club leader collected from members for a camping trip. Each member paid the same amount. What is the most the camping trip could cost per member? Explain.

Wednesday	\$36
Thursday	\$24
Friday	\$12

$$\begin{array}{r} 9 \overline{) 36 \ 54} \\ \underline{27} \\ 9 \end{array}$$

GCF = 18

$$\begin{array}{r} 9 \overline{) 18 \ 72} \\ \underline{18} \\ 0 \end{array}$$

Each member paid \$18 at most for the camping trip.

Lesson 5-1

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5-2 Study Guide and Intervention
 Simplifying Fractions

Fractions that name the same number are equivalent fractions. To find equivalent fractions, you can multiply or divide the numerator and denominator by the same nonzero number.

EXAMPLE 1 Replace the ● with a number so that $\frac{1}{2} = \frac{\bullet}{10}$.
 Since $2 \times 5 = 10$, multiply the numerator and denominator by 5.

$$\begin{array}{l} \left. \begin{array}{l} \times 5 \\ \frac{1}{2} = \frac{\bullet}{10} \\ \times 5 \end{array} \right\} \end{array} \quad \begin{array}{l} \left. \begin{array}{l} \times 5 \\ \frac{1}{2} = \frac{5}{10} \\ \times 5 \end{array} \right\} \end{array}$$

When the GCF of the numerator and denominator is 1, the fraction is in simplest form. To write a fraction in simplest form, you can divide the numerator and denominator by the GCF.

EXAMPLE 2 Write $\frac{12}{30}$ in simplest form.
 The GCF of 12 and 30 is 6.

$$\left. \begin{array}{l} \div 6 \\ \frac{12}{30} = \frac{2}{5} \\ \div 6 \end{array} \right\} \text{ Divide the numerator and denominator by the GCF, 6.}$$

The GCF of 2 and 5 is 1, so $\frac{2}{5}$ is in simplest form.

EXERCISES

Replace each ● with a number so that the fractions are equivalent.

- $\frac{1}{6} = \frac{\bullet}{15}$
- $\frac{12}{18} = \frac{2}{\bullet}$
- $\frac{\bullet}{14} = \frac{27}{42}$

Write each fraction in simplest form. If the fraction is already in simplest form, write simplest form.

- $\frac{6}{30}$
- $\frac{5}{3}$
- $\frac{12}{3}$ simplest form
- $\frac{9}{8}$
- $\frac{21}{28} = \frac{3}{4}$
- $\frac{15}{30} = \frac{1}{2}$
- $\frac{7}{10}$ simplest form

$$\begin{array}{r} 7 \overline{) 21/28} \\ \underline{14} \\ 7 \end{array} \quad \begin{array}{r} 5 \overline{) 15/30} \\ \underline{15} \\ 0 \end{array}$$

5-2 Practice: Word Problems
Simplifying Fractions

For Exercises 1-3, use the following information and the table at the right. Write your answers in simplest form.

In a frequency table, the relative frequency of a category is the fraction of the data that falls in that class.

To find relative frequency, divide the frequency by the total number of items.

Color	Tally	Frequency
Brown		12
Blue		5
Green		4
Hazel		8
Violet		1

1. STATISTICS What is the relative frequency of people with brown eyes?

$\frac{12}{30}$ brown total = $\frac{12}{30}$

$\frac{12}{30} = \frac{2}{5}$

2. STATISTICS What is the relative frequency of people with hazel eyes?

$\frac{8}{30}$ Total

3. STATISTICS What is the relative frequency of people with brown or hazel eyes?

4. ANIMALS Lions sleep about 20 hours a day. Write $\frac{20}{24}$ as a fraction in simplest form.

$\frac{20}{24} = \frac{5}{6}$

Lions sleep $\frac{5}{6}$ of the day.

5. MARBLES Carlota has 63 marbles. Twenty-eight of her marbles are aggies. What fraction of Carlota's marbles are aggies? Write the answer in simplest form.

6. MOVIES Fourteen of the top thirty all-time grossing children's films were animated films. Write $\frac{14}{30}$ as a fraction in simplest form.

$\frac{14}{30} = \frac{7}{15}$

5-3 Study Guide and Intervention
Mixed Numbers and Improper Fractions

The number $2\frac{2}{3}$ is a mixed number. A mixed number indicates the sum of a whole number and a fraction. The number $\frac{7}{3}$ is an improper fraction. Improper fractions are fractions greater than or equal to 1. Mixed numbers can be written as mixed numbers or as improper fractions.

EXAMPLE 1 Draw a model for $2\frac{1}{3}$. Then write $2\frac{1}{3}$ as an improper fraction.

The model shows there are seven $\frac{1}{3}$'s.



You can also multiply the denominator and the whole number. Then add the numerator.

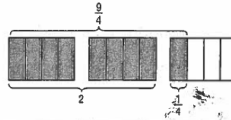
$2\frac{1}{3} \rightarrow \frac{(2 \times 3) + 1}{3} = \frac{7}{3}$

So $2\frac{1}{3}$ can be written as $\frac{7}{3}$.

EXAMPLE 2 Write $\frac{9}{4}$ as a mixed number.

Divide 9 by 4. Use the remainder as the numerator of the fraction.

$$\begin{array}{r} 2\frac{1}{4} \\ 4 \overline{)9} \\ \underline{-8} \\ 1 \end{array}$$



So $\frac{9}{4}$ can be written as $2\frac{1}{4}$.

EXERCISES

Write each mixed number as an improper fraction.

- 1. $3\frac{5}{8} = \frac{25}{8}$
- 2. $2\frac{2}{5} = \frac{14}{5}$
- 3. $2\frac{1}{2} = \frac{5}{2}$
- 4. $1\frac{2}{3}$
- 5. $2\frac{1}{9}$
- 6. $3\frac{7}{10} = \frac{37}{10}$
- 7. $\frac{19}{8} = 2\frac{3}{8}$
- 8. $1\frac{3}{4}$

Write each improper fraction as a mixed number.

- 9. $\frac{7}{4} = 1\frac{3}{4}$
- 10. $\frac{5}{3}$
- 11. $\frac{3}{2}$
- 12. $\frac{11}{8} = 1\frac{3}{8}$
- 13. $\frac{22}{5} = 4\frac{2}{5}$
- 14. $\frac{15}{7}$
- 15. $\frac{28}{4} = 7$
- 16. $\frac{16}{3} = 5\frac{1}{3}$

Lesson 5-3



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Practice: Word Problems

Mixed Numbers and Improper Fractions

<p>1. MILEAGE Brownsville is $7\frac{5}{8}$ miles away from Frisco. Write the distance as an improper fraction.</p> <p>$7\frac{5}{8} = \frac{56+5}{8} = \frac{61}{8}$</p> <p>Brownsville is $\frac{61}{8}$ miles away from Frisco.</p>	<p>2. SWIMMING Steven swam $\frac{47}{6}$ meters crossing Lady Jay Creek. Write the distance he swam as a mixed number.</p> <p>$\frac{47}{6} = 6\frac{147}{6} = 6\frac{49}{2}$</p> <p>Steven swam $6\frac{49}{2}$ meters crossing Lady Jay Creek.</p>
<p>3. FOOD Kenji's favorite recipe calls for $3\frac{3}{4}$ cups of flour. Write the amount of flour he needs as an improper fraction.</p>	<p>4. PUPPY Nikki's puppy weighs $\frac{25}{7}$ pounds. Write the puppy's weight as a mixed number.</p>
<p>5. EXERCISE Koto can run $4\frac{7}{10}$ miles before she is too tired to keep going. Write the distance she can run as an improper fraction.</p> <p>$4\frac{7}{10} = \frac{47}{10}$</p> <p>Koto can run $\frac{47}{10}$ miles before she is too tired to keep going.</p>	<p>6. GEOGRAPHY Hampshire Hill is $\frac{87}{9}$ meters tall. Write its height as a mixed number.</p>

Lesson 5-3



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Study Guide and Intervention

Least Common Multiple

A multiple of a number is the product of the number and any whole number. The multiples of 2 are below.

$1 \times 2 = 2$ $2 \times 2 = 4$ $3 \times 2 = 6$ $4 \times 2 = 8$ $5 \times 2 = 10$

The smallest number other than 0 that is a multiple of two or more whole numbers is the least common multiple (LCM) of the numbers.

EXAMPLE 1 Find the LCM of 4 and 6 by making a list.

- Step 1** List the nonzero multiples.
- multiples of 4: 4, 8, 12, 16, 20, ...
 - multiples of 6: 6, 12, 18, 24, 30, ...
- Step 2** Identify the LCM from the common multiples.
- The LCM of 4 and 6 is 12.

EXAMPLE 2 Find the LCM of 6 and 15 by using prime factors.

- Step 1** Write the prime factorization of each number.
- $6 = 2 \times 3$
 $15 = 3 \times 5$
- Step 2** Identify all common prime factors.
- $6 = 2 \times 3$
 $15 = 3 \times 5$
- Step 3** Find the product of all of the prime factors using each common prime factor once and any remaining factors.
- The LCM is $2 \times 3 \times 5$ or 30.

EXERCISES

Find the LCM of each set of numbers.

- 2 and 4
 - 5 and 10
 - 3 and 7
 - 4 and 6
 - 6 and 9
 - 4 and 10
 - 9 and 27
 - 4 and 6
 - 5 and 7
- Handwritten solutions:
- For 2 and 4: $2 \times 2 = 4$
 - For 5 and 10: $5 \times 2 = 10$
 - For 3 and 7: $3 \times 7 = 21$
 - For 4 and 6: $4, 8, 12, 16, 20, 24, 28, 32, 36, 40, 44, 48, 52, 56, 60$ (LCM = 12)
 - For 6 and 9: $6, 12, 18, 24, 30, 36, 42, 48, 54, 60, 66, 72, 78, 84, 90, 96, 102, 108, 114, 120$ (LCM = 18)
 - For 4 and 10: $4, 8, 12, 16, 20, 24, 28, 32, 36, 40, 44, 48, 52, 56, 60, 64, 68, 72, 76, 80, 84, 88, 92, 96, 100, 104, 108, 112, 116, 120$ (LCM = 20)
 - For 9 and 27: $9, 18, 27, 36, 45, 54, 63, 72, 81, 90, 99, 108, 117, 126, 135, 144, 153, 162, 171, 180, 189, 198, 207, 216, 225, 234, 243, 252, 261, 270, 279, 288, 297, 306, 315, 324, 333, 342, 351, 360, 369, 378, 387, 396, 405, 414, 423, 432, 441, 450, 459, 468, 477, 486, 495, 504, 513, 522, 531, 540, 549, 558, 567, 576, 585, 594, 603, 612, 621, 630, 639, 648, 657, 666, 675, 684, 693, 702, 711, 720, 729, 738, 747, 756, 765, 774, 783, 792, 801, 810, 819, 828, 837, 846, 855, 864, 873, 882, 891, 900, 909, 918, 927, 936, 945, 954, 963, 972, 981, 990, 999, 1008, 1017, 1026, 1035, 1044, 1053, 1062, 1071, 1080, 1089, 1098, 1107, 1116, 1125, 1134, 1143, 1152, 1161, 1170, 1179, 1188, 1197, 1206, 1215, 1224, 1233, 1242, 1251, 1260, 1269, 1278, 1287, 1296, 1305, 1314, 1323, 1332, 1341, 1350, 1359, 1368, 1377, 1386, 1395, 1404, 1413, 1422, 1431, 1440, 1449, 1458, 1467, 1476, 1485, 1494, 1503, 1512, 1521, 1530, 1539, 1548, 1557, 1566, 1575, 1584, 1593, 1602, 1611, 1620, 1629, 1638, 1647, 1656, 1665, 1674, 1683, 1692, 1701, 1710, 1719, 1728, 1737, 1746, 1755, 1764, 1773, 1782, 1791, 1800, 1809, 1818, 1827, 1836, 1845, 1854, 1863, 1872, 1881, 1890, 1899, 1908, 1917, 1926, 1935, 1944, 1953, 1962, 1971, 1980, 1989, 1998, 2007, 2016, 2025, 2034, 2043, 2052, 2061, 2070, 2079, 2088, 2097, 2106, 2115, 2124, 2133, 2142, 2151, 2160, 2169, 2178, 2187, 2196, 2205, 2214, 2223, 2232, 2241, 2250, 2259, 2268, 2277, 2286, 2295, 2304, 2313, 2322, 2331, 2340, 2349, 2358, 2367, 2376, 2385, 2394, 2403, 2412, 2421, 2430, 2439, 2448, 2457, 2466, 2475, 2484, 2493, 2502, 2511, 2520, 2529, 2538, 2547, 2556, 2565, 2574, 2583, 2592, 2601, 2610, 2619, 2628, 2637, 2646, 2655, 2664, 2673, 2682, 2691, 2700, 2709, 2718, 2727, 2736, 2745, 2754, 2763, 2772, 2781, 2790, 2799, 2808, 2817, 2826, 2835, 2844, 2853, 2862, 2871, 2880, 2889, 2898, 2907, 2916, 2925, 2934, 2943, 2952, 2961, 2970, 2979, 2988, 2997, 3006, 3015, 3024, 3033, 3042, 3051, 3060, 3069, 3078, 3087, 3096, 3105, 3114, 3123, 3132, 3141, 3150, 3159, 3168, 3177, 3186, 3195, 3204, 3213, 3222, 3231, 3240, 3249, 3258, 3267, 3276, 3285, 3294, 3303, 3312, 3321, 3330, 3339, 3348, 3357, 3366, 3375, 3384, 3393, 3402, 3411, 3420, 3429, 3438, 3447, 3456, 3465, 3474, 3483, 3492, 3501, 3510, 3519, 3528, 3537, 3546, 3555, 3564, 3573, 3582, 3591, 3600, 3609, 3618, 3627, 3636, 3645, 3654, 3663, 3672, 3681, 3690, 3699, 3708, 3717, 3726, 3735, 3744, 3753, 3762, 3771, 3780, 3789, 3798, 3807, 3816, 3825, 3834, 3843, 3852, 3861, 3870, 3879, 3888, 3897, 3906, 3915, 3924, 3933, 3942, 3951, 3960, 3969, 3978, 3987, 3996, 4005, 4014, 4023, 4032, 4041, 4050, 4059, 4068, 4077, 4086, 4095, 4104, 4113, 4122, 4131, 4140, 4149, 4158, 4167, 4176, 4185, 4194, 4203, 4212, 4221, 4230, 4239, 4248, 4257, 4266, 4275, 4284, 4293, 4302, 4311, 4320, 4329, 4338, 4347, 4356, 4365, 4374, 4383, 4392, 4401, 4410, 4419, 4428, 4437, 4446, 4455, 4464, 4473, 4482, 4491, 4500, 4509, 4518, 4527, 4536, 4545, 4554, 4563, 4572, 4581, 4590, 4599, 4608, 4617, 4626, 4635, 4644, 4653, 4662, 4671, 4680, 4689, 4698, 4707, 4716, 4725, 4734, 4743, 4752, 4761, 4770, 4779, 4788, 4797, 4806, 4815, 4824, 4833, 4842, 4851, 4860, 4869, 4878, 4887, 4896, 4905, 4914, 4923, 4932, 4941, 4950, 4959, 4968, 4977, 4986, 4995, 5004, 5013, 5022, 5031, 5040, 5049, 5058, 5067, 5076, 5085, 5094, 5103, 5112, 5121, 5130, 5139, 5148, 5157, 5166, 5175, 5184, 5193, 5202, 5211, 5220, 5229, 5238, 5247, 5256, 5265, 5274, 5283, 5292, 5301, 5310, 5319, 5328, 5337, 5346, 5355, 5364, 5373, 5382, 5391, 5400, 5409, 5418, 5427, 5436, 5445, 5454, 5463, 5472, 5481, 5490, 5499, 5508, 5517, 5526, 5535, 5544, 5553, 5562, 5571, 5580, 5589, 5598, 5607, 5616, 5625, 5634, 5643, 5652, 5661, 5670, 5679, 5688, 5697, 5706, 5715, 5724, 5733, 5742, 5751, 5760, 5769, 5778, 5787, 5796, 5805, 5814, 5823, 5832, 5841, 5850, 5859, 5868, 5877, 5886, 5895, 5904, 5913, 5922, 5931, 5940, 5949, 5958, 5967, 5976, 5985, 5994, 6003, 6012, 6021, 6030, 6039, 6048, 6057, 6066, 6075, 6084, 6093, 6102, 6111, 6120, 6129, 6138, 6147, 6156, 6165, 6174, 6183, 6192, 6201, 6210, 6219, 6228, 6237, 6246, 6255, 6264, 6273, 6282, 6291, 6300, 6309, 6318, 6327, 6336, 6345, 6354, 6363, 6372, 6381, 6390, 6399, 6408, 6417, 6426, 6435, 6444, 6453, 6462, 6471, 6480, 6489, 6498, 6507, 6516, 6525, 6534, 6543, 6552, 6561, 6570, 6579, 6588, 6597, 6606, 6615, 6624, 6633, 6642, 6651, 6660, 6669, 6678, 6687, 6696, 6705, 6714, 6723, 6732, 6741, 6750, 6759, 6768, 6777, 6786, 6795, 6804, 6813, 6822, 6831, 6840, 6849, 6858, 6867, 6876, 6885, 6894, 6903, 6912, 6921, 6930, 6939, 6948, 6957, 6966, 6975, 6984, 6993, 7002, 7011, 7020, 7029, 7038, 7047, 7056, 7065, 7074, 7083, 7092, 7101, 7110, 7119, 7128, 7137, 7146, 7155, 7164, 7173, 7182, 7191, 7200, 7209, 7218, 7227, 7236, 7245, 7254, 7263, 7272, 7281, 7290, 7299, 7308, 7317, 7326, 7335, 7344, 7353, 7362, 7371, 7380, 7389, 7398, 7407, 7416, 7425, 7434, 7443, 7452, 7461, 7470, 7479, 7488, 7497, 7506, 7515, 7524, 7533, 7542, 7551, 7560, 7569, 7578, 7587, 7596, 7605, 7614, 7623, 7632, 7641, 7650, 7659, 7668, 7677, 7686, 7695, 7704, 7713, 7722, 7731, 7740, 7749, 7758, 7767, 7776, 7785, 7794, 7803, 7812, 7821, 7830, 7839, 7848, 7857, 7866, 7875, 7884, 7893, 7902, 7911, 7920, 7929, 7938, 7947, 7956, 7965, 7974, 7983, 7992, 8001, 8010, 8019, 8028, 8037, 8046, 8055, 8064, 8073, 8082, 8091, 8100, 8109, 8118, 8127, 8136, 8145, 8154, 8163, 8172, 8181, 8190, 8199, 8208, 8217, 8226, 8235, 8244, 8253, 8262, 8271, 8280, 8289, 8298, 8307, 8316, 8325, 8334, 8343, 8352, 8361, 8370, 8379, 8388, 8397, 8406, 8415, 8424, 8433, 8442, 8451, 8460, 8469, 8478, 8487, 8496, 8505, 8514, 8523, 8532, 8541, 8550, 8559, 8568, 8577, 8586, 8595, 8604, 8613, 8622, 8631, 8640, 8649, 8658, 8667, 8676, 8685, 8694, 8703, 8712, 8721, 8730, 8739, 8748, 8757, 8766, 8775, 8784, 8793, 8802, 8811, 8820, 8829, 8838, 8847, 8856, 8865, 8874, 8883, 8892, 8901, 8910, 8919, 8928, 8937, 8946, 8955, 8964, 8973, 8982, 8991, 9000, 9009, 9018, 9027, 9036, 9045, 9054, 9063, 9072, 9081, 9090, 9099, 9108, 9117, 9126, 9135, 9144, 9153, 9162, 9171, 9180, 9189, 9198, 9207, 9216, 9225, 9234, 9243, 9252, 9261, 9270, 9279, 9288, 9297, 9306, 9315, 9324, 9333, 9342, 9351, 9360, 9369, 9378, 9387, 9396, 9405, 9414, 9423, 9432, 9441, 9450, 9459, 9468, 9477, 9486, 9495, 9504, 9513, 9522, 9531, 9540, 9549, 9558, 9567, 9576, 9585, 9594, 9603, 9612, 9621, 9630, 9639, 9648, 9657, 9666, 9675, 9684, 9693, 9702, 9711, 9720, 9729, 9738, 9747, 9756, 9765, 9774, 9783, 9792, 9801, 9810, 9819, 9828, 9837, 9846, 9855, 9864, 9873, 9882, 9891, 9900, 9909, 9918, 9927, 9936, 9945, 9954, 9963, 9972, 9981, 9990, 10000$

NAME _____ DATE _____ PERIOD _____

5-5 Practice: Word Problems
Comparing and Ordering Fractions

<p>1. SHOES Toya is looking in her closet. If $\frac{1}{3}$ of her shoes are black and $\frac{2}{5}$ are brown, does she have more black shoes or more brown shoes? Explain.</p>	<p>2. BUDGET Daniel spends $\frac{3}{7}$ of his money on rent and $\frac{4}{9}$ of his money on food. Does he spend more money on food or rent? Explain.</p>
<p>3. WOODWORKING Isi drilled a hole that is $\frac{5}{9}$ inch wide. She has a screw that is $\frac{5}{6}$ inch wide. Is the hole wide enough to fit the screw? Explain.</p>	<p>4. FOOD In a recent survey, $\frac{2}{5}$ of the people surveyed said their favorite food was pizza, $\frac{1}{4}$ said it was hot dogs, and $\frac{3}{10}$ said it was popcorn. Which food was favored by the greatest number of people? Explain.</p>
<p>5. OFFICE SUPPLIES A blue paper clip is $\frac{1}{6}$ inch wide. A silver paper clip is $\frac{3}{8}$ inch wide, and a red paper clip is $\frac{1}{3}$ inch wide. What color paper clip has the smallest width? Explain.</p>	<p>6. GUMBALLS A red gumball is $\frac{5}{8}$ inch across. A green gumball is $\frac{6}{6}$ inch across, and a blue gumball is $\frac{7}{6}$ inch across. List the gumballs in order from smallest to largest.</p>

Handwritten notes and calculations:

For problem 4: $\frac{14}{4 \cdot 5} = 20$ (see notes), $\frac{10 \cdot 10 \cdot 20}{1 \cdot 2} = 20$

For problem 5: $\frac{1 \times 4}{6 \times 4} = \frac{4}{24}$, $\frac{3 \times 3}{8 \times 3} = \frac{9}{24}$, $\frac{1 \times 8}{3 \times 8} = \frac{8}{24}$. $\frac{4}{24}$ is the smallest.

For problem 6: $\frac{6 \cdot 8}{3 \cdot 4} = 24$, $\frac{11 \cdot 3 \cdot 24}{3 \cdot 8} = 24$

The blue paper clip is smallest because the numerator was smallest (4) when compared to the others after finding the least common denominator.

4) Pizza Hot Dog Popcorn

$$\frac{2 \times 4}{5 \times 4} \qquad \frac{1 \times 5}{4 \times 5} \qquad \frac{3 \times 2}{10 \times 2}$$

$$\frac{8 \checkmark}{20} \qquad \frac{5}{20} \qquad \frac{6}{20}$$

The food that was favored by the greatest number of people was pizza because the numerator was bigger than the others after finding the least common denominator.

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5-6 Study Guide and Intervention
Writing Decimals as Fractions

Decimals like 0.55, 0.12, and 0.08 can be written as fractions.
To write a decimal as a fraction, you can follow these steps.
• Identify the place value of the last decimal place.
• Write the decimal as a fraction using the place value as the denominator.
• If necessary, simplify the fraction.

EXAMPLE 1 Write 0.5 as a fraction in simplest form.

$$0.5 = \frac{5}{10} \quad 0.5 \text{ means five tenths.}$$

$$= \frac{5 \div 5}{10 \div 5} \quad \text{Simplify. Divide the numerator and denominator by the GCF, 5.}$$

$$= \frac{1}{2}$$

So, in simplest form, 0.5 is $\frac{1}{2}$.

EXAMPLE 2 Write 0.35 as a fraction in simplest form.

$$0.35 = \frac{35}{100} \quad 0.35 \text{ means 35 hundredths.}$$

$$= \frac{35 \div 5}{100 \div 5} \quad \text{Simplify. Divide the numerator and denominator by the GCF, 5.}$$

$$= \frac{7}{20}$$

So, in simplest form, 0.35 is $\frac{7}{20}$.

EXAMPLE 3 Write 4.375 as a mixed number in simplest form.

$$4.375 = 4 \frac{375}{1,000} \quad 0.375 \text{ means 375 thousandths.}$$

$$= 4 \frac{375 \div 125}{1,000 \div 125} \quad \text{Simplify. Divide by the GCF, 125.}$$

$$= 4 \frac{3}{8}$$

EXERCISES

Write each decimal as a fraction or mixed number in simplest form.

1. $0.9 = \frac{9}{10}$ 2. $0.8 = \frac{8 \div 4}{10 \div 4} = \frac{2}{5}$ 3. $0.27 = \frac{27}{100}$ 4. $0.75 = \frac{75 \div 25}{100 \div 25} = \frac{3}{4}$
5. 0.34 6. $0.125 = \frac{125 \div 5}{1000 \div 5} = \frac{25}{200} = \frac{5 \div 5}{200 \div 5} = \frac{1}{40}$ 7. 0.035 8. 0.008
9. 1.4 10. $3.6 = 3 \frac{6}{10} = 3 \frac{3 \div 2}{10 \div 2} = 3 \frac{3}{5}$ 11. $6.28 = 6 \frac{28}{100} = 6 \frac{28 \div 4}{100 \div 4} = 6 \frac{7}{25}$
13. 12.05 14. $4.004 = 4 \frac{4}{1000} = 4 \frac{1}{250}$ 15. $23.205 = 23 \frac{205}{1000} = 23 \frac{41}{200}$ 16. 51.724
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5-6 Practice: Word Problems
Writing Decimals as Fractions

- | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1. FIELD TRIP About 0.4 of a biology class will be going on a field trip. Write the decimal as a fraction in simplest form.</p> | <p>2. EARTH Eighty percent of all life on Earth is below the ocean's surface. Write 0.80 as a fraction in simplest form.</p> |
| <p>3. VENUS The planet Venus is 67.24 million miles away from the Sun. Write the decimal as a mixed number in simplest form.</p> | <p>4. SATURN If you weighed 138 pounds on Earth, you would weigh 128.34 pounds on Saturn. Write the weight on Saturn as a mixed number in simplest form.</p> |
| <p>5. MERCURY If you were 10 years old on Earth, you would be 41.494 years old on Mercury. Write the age on Mercury as a mixed number in simplest form.</p> | <p>6. INTERNET According to recent figures, 4.65 million people in the Middle East are online. Write the decimal as a mixed number in simplest form.</p> |

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5-7 Study Guide and Intervention

Writing Fractions as Decimals

Any fraction can be written as a decimal using division. Decimals like 0.5 and 0.516 are called terminating decimals because the digits end. A decimal like $0.\overline{87} = 0.878787\dots$ is called a repeating decimal because the digits repeat.

EXAMPLE 1 Write $\frac{3}{8}$ as a decimal.

Divide.

$$\begin{array}{r} 0.375 \\ 8 \overline{) 3.000} \\ \underline{-24} \\ 60 \\ \underline{-56} \\ 40 \\ \underline{-40} \\ 0 \end{array}$$

Therefore, $\frac{3}{8} = 0.375$.

$\frac{12}{9} = 0.\overline{2}$ $\frac{23}{99} = 0.\overline{23}$

$\frac{5}{9} = 0.\overline{5}$ $\frac{45}{99} = 0.\overline{45}$

$\frac{8}{9} = 0.\overline{8}$ $\frac{59}{99} = 0.\overline{59}$

EXAMPLE 2 Write $\frac{7}{11}$ as a decimal.

Divide.

$$\begin{array}{r} 0.6363 \\ 11 \overline{) 7.0000} \\ \underline{-66} \\ 40 \\ \underline{-33} \\ 70 \\ \underline{-66} \\ 40 \\ \underline{-33} \\ 7 \end{array}$$

The pattern repeats. Therefore, $\frac{7}{11} = 0.\overline{63}$.

EXERCISES

Write each fraction or mixed number as a decimal.

1. $\frac{3}{10} = 0.3$ 2. $\frac{3}{4} = 0.75$ 3. $\frac{1}{3} = 0.\overline{3}$ 4. $\frac{6}{10} = 0.6$
 5. $\frac{1}{8} = 0.125$ 6. $2\frac{1}{2} = 2.5$ 7. $1\frac{5}{10} = 1.5$ 8. $3\frac{8}{10} = 3.8$

9. $1\frac{3}{11} = 1.\overline{27}$ 10. $1\frac{5}{11} = 1.\overline{45}$

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Handwritten work for problem 9 shows long division of 3 by 11, resulting in 0.2727... with a repeating pattern of 27. A note says $3 \times 25 = 75$ and $4 \times 25 = 100$, leading to 0.75 .
 Handwritten work for problem 10 shows long division of 5 by 11, resulting in 0.4545... with a repeating pattern of 45. A note says $5 \times 9 = 45$ and $11 \times 9 = 99$, leading to 4.45 .
 Another handwritten calculation shows $11 \overline{) 5.0000}$ with steps: $\underline{-44}$, 60 , $\underline{-55}$, 50 , $\underline{-44}$, 60 .

5-7 Practice: Word Problems

Writing Fractions as Decimals

<p>1. PLANETS The planet Mercury is roughly $\frac{2}{5}$ the size of Earth. Write the fraction as a decimal.</p>	<p>2. MARBLES Lin has a marble that is $\frac{5}{8}$ inch wide. Write the marble's width as a decimal.</p>
<p>3. HOMEWORK Miko has finished $\frac{6}{11}$ of her homework. Write the fraction as a decimal.</p>	<p>4. EXERCISE Tate has been dancing for $\frac{5}{6}$ of an hour. Write this fraction as a decimal.</p>
<p>5. SPORTS Charlie played tennis for $3\frac{3}{4}$ hours. Write the mixed number as a decimal.</p>	<p>6. COOKING A recipe calls for $2\frac{2}{3}$ cups of milk. Write the mixed number as a decimal.</p>
<p>7. HEIGHT Winona is $2\frac{4}{11}$ the height of her little brother. Write the mixed number as a decimal.</p>	<p>8. RECESS Jennifer has been spinning in circles for $4\frac{9}{16}$ minutes. Write the mixed number as a decimal. Jennifer has been spinning in circles for 4.1875 minutes.</p>

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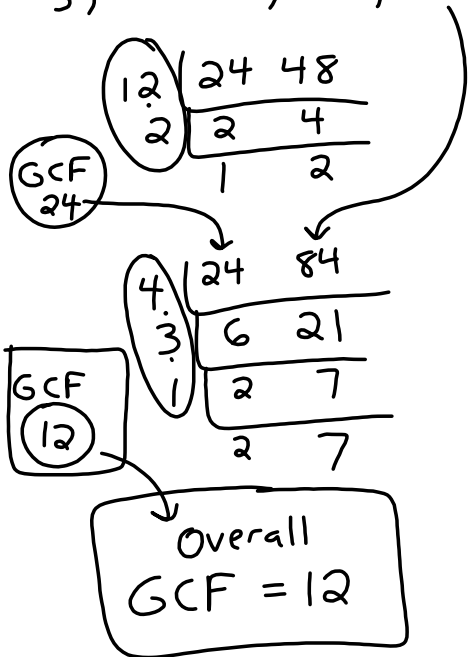
1) $\frac{4 \div 2}{20 \div 2} = \frac{2 \div 2}{10 \div 2} = \frac{1}{5}$

$\frac{6 \div 2}{20 \div 2} = \frac{3}{10}$

$\frac{2 \div 2}{20 \div 2} = \frac{1}{10}$

$\frac{8 \div 4}{20 \div 4} = \frac{2}{5}$

5) GCF 24, 48, 84



20) $\frac{5 \times 15}{8 \times 15} = \frac{75}{120}$

$\frac{3 \times 24}{5 \times 24} = \frac{72}{120}$

$\frac{2 \times 40}{3 \times 40} = \frac{80}{120}$

$\frac{1}{8} \cdot \frac{5}{1} = \frac{5}{8}$ LCD = 40

$\frac{1}{3} \cdot \frac{40}{40} = \frac{40}{120}$ LCD = 120

least

$\frac{72}{120}, \frac{75}{120}, \frac{80}{120}$

greatest

$\frac{3}{5}, \frac{5}{8}, \frac{2}{3}$

I

8) $\frac{3}{16} =$

$\begin{array}{r} 4 \\ 16 \\ \times 8 \\ \hline 128 \end{array}$

$\begin{array}{r} 4 \\ 16 \\ \times 7 \\ \hline 112 \end{array}$

$\begin{array}{r} 3 \\ 16 \\ \times 6 \\ \hline 96 \end{array}$

$\begin{array}{r} 3 \\ 16 \\ \times 5 \\ \hline 80 \end{array}$

$\begin{array}{r} 0.1875 \\ 16 \overline{) 3.0000} \\ \underline{-16} \\ 140 \\ \underline{-128} \\ 120 \\ \underline{-112} \\ 80 \\ \underline{-80} \\ 0 \end{array}$

