Investigation 1 Additional Practice

1. a. **i.** $\frac{5}{12}$ **ii.** $\frac{3}{4}$ **iii.** $\frac{1}{3}$ **iv.** $\frac{5}{8}$ **v.** $\frac{11}{12}$ **vi.** $\frac{5}{6}$

b. **i.** $\frac{7}{12}$ **ii.** $\frac{1}{4}$ **iii.** $\frac{2}{3}$ **iv.** $\frac{3}{8}$ **v.** $\frac{1}{12}$ **vi.** $\frac{1}{6}$

c. The sum of the fractions is 1.

2. a. $\frac{1}{2}$ **b.** $\frac{1}{3}$ **c.** $\frac{3}{4}$

d. $\frac{1}{4}$; half of $\frac{1}{2}$ is $\frac{1}{4}$. **e.** $\frac{2}{3}$; twice $\frac{1}{3}$ is $\frac{2}{3}$.

3. a. $\frac{8}{24}$ or $\frac{1}{3}$ **b.** 12

4. a. 6 **b.** $\frac{3}{4}$ **c.** $\frac{1}{4}$

5. a. $\frac{1}{8}$ **b.** $\frac{5}{6}$

6. a. Shade 8, 16, and 24 squares, respectively, on the three grids.

b. Shade 9 and 12 squares, respectively, on the two grids.

c. Shade 4 and 3 squares, respectively, on the two grids.

7. $2\frac{3}{4}$ tanks of gas will be needed for the trip.

Investigation 2 Additional Practice

1. a. = **b.** < **c.** > **d.** > **e.** < **f.** >

2. a. **i.** $\frac{2}{3} > \frac{2}{5}$ **ii.** $\frac{4}{6} < \frac{4}{5}$ **iii.** $\frac{3}{4} > \frac{3}{8}$

b. When the numerators are the same, consider the denominators. The larger the denominator, the smaller the parts. The smaller the denominator, the larger the parts. Since both fractions have the same numerator they are using the same number of parts, and the fraction with the smaller denominator (indicating larger size parts) is the larger fraction.

3. a. **i.** $\frac{2}{5} < \frac{4}{5}$ **ii.** $\frac{4}{9} < \frac{7}{9}$ **iii.** $\frac{5}{11} > \frac{3}{11}$

b. When the denominators are the same, the fraction with the larger numerator is greater because it has more of the same size pieces.

4. a. $\frac{2}{6} < \frac{1}{2} < \frac{2}{3} < \frac{3}{4}$ **b.** $\frac{1}{7} < \frac{1}{3} < \frac{11}{12} < \frac{24}{4}$

c. $\frac{1}{9} < \frac{1}{6} < \frac{1}{5} < \frac{1}{3} < \frac{1}{2}$ **d.** $\frac{3}{16} < \frac{3}{8} < \frac{1}{2} < \frac{11}{16} < \frac{3}{4}$

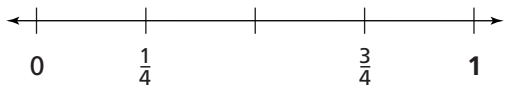
5. Answers will vary. All fractions equivalent to these sample responses are correct.

a. $\frac{1}{3} = \frac{2}{6}$ **b.** $\frac{3}{5} = \frac{6}{10}$ **c.** $\frac{7}{8} = \frac{14}{16}$

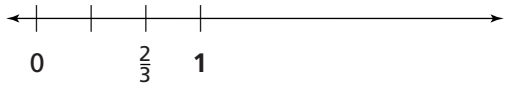
d. $\frac{3}{4} = \frac{6}{8}$ **e.** $\frac{3}{6} = \frac{1}{2}$ **f.** $\frac{9}{10} = \frac{18}{20}$

6. a. $\frac{9}{14}$ **b.** $\frac{7}{24}$ **c.** $\frac{3}{16}$

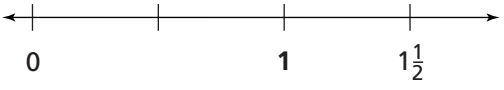
7. a.



b.



c.



8. a. $\frac{3}{8}$ **b.** $\frac{5}{8}$ **c.** $\frac{10}{16}$ or $\frac{5}{8}$ **d.** $\frac{6}{8}$ or $\frac{3}{4}$

9. Answers appear in bold.

Fraction	$\frac{7}{4}$	$\frac{11}{3}$	$\frac{35}{3}$	$\frac{19}{4}$	$\frac{17}{6}$	$\frac{15}{2}$
Mixed Number	$\mathbf{1\frac{3}{4}}$	$\mathbf{3\frac{2}{3}}$	$\mathbf{11\frac{2}{3}}$	$\mathbf{4\frac{3}{4}}$	$\mathbf{2\frac{5}{6}}$	$\mathbf{7\frac{1}{2}}$

10. a. $\frac{3}{5}$ **b.** 6

c. If the orange has five equal-size sections, it is in fifths and five people can share it. If you want to share it with three people, Lisa should section the orange into a number of pieces that both five (what you have) and three (what you need) go into (for example, fifteenths).

Skill: Comparing Fractions

1. $\frac{1}{3}$; $\frac{4}{12}$; yes **2.** $\frac{1}{2}$; $\frac{3}{5}$; no **3.** $\frac{3}{4}$; $\frac{6}{10}$; no

4. > **5.** > **6.** =

7. < **8.** > **9.** <

10. > **11.** = **12.** <

13. > **14.** < **15.** <

16. $\frac{1}{6}$, $\frac{1}{4}$, $\frac{1}{3}$ **17.** $\frac{1}{2}$, $\frac{5}{6}$, $\frac{7}{8}$ **18.** $\frac{1}{4}$, $\frac{3}{8}$, $\frac{2}{5}$

19. $\frac{5}{9}, \frac{2}{3}, \frac{7}{8}$ **20.** $\frac{3}{8}, \frac{1}{2}, \frac{5}{6}$ **21.** $\frac{9}{10}, \frac{11}{12}, \frac{15}{16}$

22. $\frac{1}{2}, \frac{3}{4}, \frac{7}{8}$ **23.** $\frac{5}{9}, \frac{7}{12}, \frac{2}{3}$ **24.** $\frac{1}{2}, \frac{7}{8}, \frac{15}{16}$

25. No; $\frac{1}{2}$ is less than $\frac{5}{8}$.

Skill: Mixed Numbers and Improper Fractions

1. $\frac{15}{8}$ **2.** $\frac{11}{4}$ **3.** $\frac{22}{3}$ **4.** $\frac{26}{3}$

5. $\frac{15}{4}$ **6.** $\frac{17}{4}$ **7.** $\frac{35}{6}$ **8.** $\frac{19}{10}$

9. $\frac{47}{12}$ **10.** $\frac{39}{8}$ **11.** $\frac{13}{5}$ **12.** $\frac{37}{15}$

13. $7\frac{1}{2}$ **14.** $2\frac{2}{3}$ **15.** $2\frac{1}{2}$ **16.** $2\frac{1}{3}$

17. $1\frac{1}{10}$ **18.** $1\frac{1}{6}$ **19.** $1\frac{1}{8}$ **20.** $2\frac{1}{2}$

21. $2\frac{1}{4}$ **22.** $1\frac{4}{9}$ **23.** $1\frac{2}{3}$ **24.** $4\frac{1}{4}$

25. $\frac{33}{6}$ **26.** $\frac{123}{12}$

Investigation 3 Additional Practice

1. a. 0.3 or $\frac{3}{10}$ **b.** 0.15 or $\frac{3}{20}$

c. 0.3 or $\frac{3}{10}$ **d.** 0.25 or $\frac{1}{4}$

2. a. $0.305 < 0.35$ **b.** $0.123 > 0.1002$

c. $0.25 = 0.25000$ **d.** $0.25 > 0.025$

e. $3.45 > 3.045$ **f.** $12.03 < 12.30$

3. a. $2.5 > 2\frac{2}{5}$ **b.** $0.65 < \frac{2}{3}$ **c.** $0.8 > \frac{4}{7}$

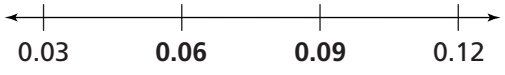
d. $\frac{5}{8} = 0.625$ **e.** $0.3 < \frac{3}{7}$ **f.** $2.1 > 1\frac{9}{10}$

g. $\frac{11}{12} < \frac{11}{11}$ **h.** $\frac{3}{6} = 0.5$ **i.** $9 > 8\frac{8}{10}$

4. a.

b.

c.



d.

5. Answers will vary. All fractions equivalent to these sample responses are correct.

a. $\frac{6}{10} = \frac{3}{5} = \frac{9}{15}$ **b.** $1\frac{7}{10} = 1\frac{14}{20} = 1\frac{21}{30}$

c. $\frac{5}{100} = \frac{1}{20} = \frac{10}{200}$ **d.** $2\frac{3}{10} = 2\frac{6}{20} = 2\frac{12}{40}$

e. $\frac{15}{100} = \frac{3}{20} = \frac{30}{200}$ **f.** $\frac{5}{8} = \frac{10}{16} = \frac{15}{24}$

6. a. 0.5 **b.** 0.2 **c.** 1.75 **d.** 0.375

e. 5.55 **f.** 0.75

7. a. $2\frac{3}{8} = 2.375$ miles **b.** $2\frac{1}{8} = 2.125$ miles

c. $\frac{3}{8}$ or 0.375 mile.

8. a. 4 **b.** 2.6

9. a. 10 **b.** 4.75

10. a. Agree; possible explanation: $0.3 = \frac{3}{10}$ is close to $\frac{1}{3} = \frac{3}{9}$.

b. Greater than; possible explanation: Paul's estimate is greater than 0.3 because $\frac{1}{3}$ is about 0.33, and $0.33 > 0.3$.

Skill: Fractions and Decimals

1. 0.72; $\frac{18}{25}$ **2.** 0.9; $\frac{9}{10}$ **3.** 0.04; $\frac{1}{25}$ **4.** $\frac{3}{5}$

5. $1\frac{1}{4}$ **6.** $\frac{37}{50}$ **7.** $\frac{29}{100}$ **8.** $\frac{127}{200}$

9. $\frac{4}{5}$ **10.** $\frac{19}{20}$ **11.** $\frac{129}{200}$ **12.** 0.09

13. 0.28 **14.** 0.06 **15.** 0.008

16. twelve and eight hundred seventy-three thousandths

17. eight and five hundred fifty-two ten-thousandths

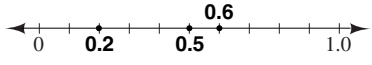
18. sixty-five hundred-thousandths

Skill: Comparing and Ordering Decimals

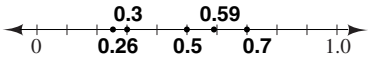
1. > **2.** = **3.** < **4.** > **5.** < **6.** =

7. < **8.** < **9.** = **10.** > **11.** = **12.** >

13.



14.



15. $0.3 < 0.5$ and $0.7 > 0.5$

16a. 0.73; 0.84; 0.12 **16b.** 0.12; 0.73; 0.84

Investigation 4 Additional Practice

1. a. $\frac{2}{5} = 0.4 = 40\%$ **b.** $\frac{11}{20} = 0.55 = 55\%$

c. $\frac{9}{25} = 0.36 = 36\%$ **d.** $\frac{3}{8} = 0.375 = 37.5\%$

e. $\frac{1}{2} = 0.5 = 50\%$ **f.** $\frac{3}{4} = 0.75 = 75\%$

2. a. 30%

b. Half of 70% = 35% = $\frac{35}{100} = \frac{7}{20}$ of the class does homework 5 nights each week.

c. 35%

d. No, because percents are comparisons "out of 100". You do not know the actual number represented in the whole.

3. a. 6 **b.** 3 **c.** 8 **d.** $\frac{7}{24}$

e. 100%, because each student takes one of the four means of getting to school. Figure out the actual number of students in each category the total is 24.

4. a. $\frac{5}{8} = 0.625 = 62.5\%$

b. $\frac{3}{4} = 0.75 = 75\%$

c. $\frac{1}{2} = 0.5 = 50\%$ **d.** $\frac{2}{5} = 0.4 = 40\%$

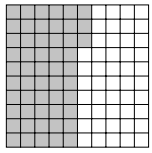
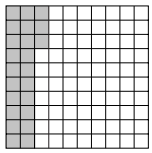
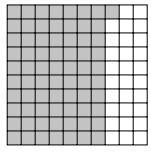
5. a. $\frac{42}{50}$; 0.84; 84% **b.** $\frac{37}{50}$; 0.74; 74%

c. $\frac{18}{50}$; 0.36; 36%

6. Answers appear in bold.

Fraction	Decimal	Percent
$\frac{3}{8}$	**0.375**	**37.5%**
$\frac{22}{25}$	0.88	**88%**
$\frac{7}{20}$	**0.35**	35%
$1\frac{1}{4}$	**1.25**	**125%**
$\frac{5}{8}$	0.625	**62.5%**
$\mathbf{2\frac{3}{4}}$	**2.75**	275%

Skill: Percents

1.  **2.**  **3.** 

4. 36%	**5.** 40%	**6.** 75%	**7.** 75%
8. 80%	**9.** 85%	**10.** 78%	**11.** 84%
12. 76%	**13.** 87%	**14.** 90%	**15.** 80%
16. 60%	**17.** 90%	**18.** 30%	**19.** 24%
20. 7%	**21.** 18%	**22.** 36%	**23.** 40%
24. 70%	**25.** 16%	**26.** 64%	

Skill: Percents, Fractions, and Decimals

1. 0.46; $\frac{23}{50}$ **2.** 0.17; $\frac{17}{100}$ **3.** 0.9; $\frac{9}{10}$

4. 0.05; $\frac{1}{20}$ **5.** 2%; $\frac{1}{50}$ **6.** 45%; $\frac{9}{20}$

7. 40%; $\frac{2}{5}$ **8.** 92%; $\frac{23}{25}$ **9.** 0.6; 60%

10. 0.7; 70% **11.** 0.52; 52% **12.** 0.85; 85%

13.

1. 6	0		2. 2	0
5		3. 5	5	
		0		4. 1
5. 2	3		6. 3	5
4			0	
	7. 1	7		8. 1
9. 4	0		10. 3	6