



Fractions, Decimals and Percents

Answer Keys, Program 1: Worksheets 1 - 4

Each question on every worksheet offers the students the option of marking “Teacher” instead of or in conjunction with answering the question. The “Teacher” option is included to support student understanding and achievement. Students may have as much help and guidance as they need to understand concepts and master skills.

Instructors may decide whether to use the two or four point scoring rubric for constructed response problems (problems that use numbers, pictures, or words to justify/explain student answers). See the appendix for the complete rubrics.

Two-Point Scoring Rubric

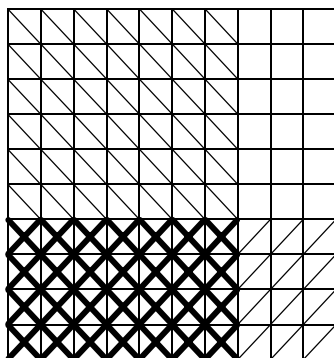
- 2 – Complete
- 1 – Partial
- 0 – Inadequate

Four-Point Scoring Rubric

- 4 – Complete
- 3 – Clear
- 2 – Partial
- 1 – Minimal
- 0 – Inadequate

Worksheet 1

1. C. 0.80, 80%, $\frac{4}{5}$
2. a. $3\frac{1}{2}$, b. yes, Student responses should show an understanding of the following concepts:
 - a. $3\frac{1}{2}$, Add the mixed numbers: $2\frac{1}{4} + 1\frac{1}{4} = 3\frac{1}{2}$
 - b. yes, Add one half and three fourths to get five fourths, then compare five fourths to five thirds: $\frac{3}{4} + \frac{1}{2} = \frac{3}{4} + \frac{2}{4} = \frac{5}{4}$ or $1\frac{1}{4}$, and $1\frac{2}{3} > 1\frac{1}{4}$
3. B. -5 F, -10 F, -17 F, -24 F, -28 F
4. .28. Student responses should show a 10 by 10 grid similar to the one below. The grid should illustrate the problem $.7 \times .4 = .28$. Variables: Student may shade the tenths rather than use cross hatches. They may begin in any quadrant of the grid.



5. C. $\frac{2}{5} + \frac{1}{4} = \frac{13}{20}$
6. C. 100 seconds



7. Science $\frac{80}{100}$ (80 of 100 points) and English $\frac{4}{5}$ (4 out of 5 on the rubric.).
- Students may have chosen to compare the scores by writing each one as a fraction reduced to lowest terms. Science: $\frac{80}{100} \div \frac{20}{20} = \frac{4}{5}$, English: $\frac{4}{5}$, Geography: $\frac{30}{40} \div \frac{10}{10} = \frac{3}{4}$ German: $\frac{9}{10}$.
 - Students may have chosen to write each score as a percent. Science: $\frac{80}{100}$ or 80%. English: $\frac{4}{5} \times \frac{20}{20} = \frac{80}{100}$ or 80%. Geography: $\frac{30}{40} \times \frac{2.5}{2.5} = \frac{75}{100}$ or $\frac{30}{40} \div \frac{10}{10} = \frac{3}{4} \times \frac{25}{25} = \frac{75}{100}$ or 75%. German: $\frac{9}{10} \times \frac{10}{10} = \frac{90}{100}$ or 90%.
8. C. about 15 songs
9. a. $980, 456 \div 345 + 158 + 21 = 980$ b. $645, 550 \times 2 - (401 + 54) = 645$
10. a. $\frac{10}{6}$ or $\frac{5}{3}$ b. 1.7
- a. a. Improper fraction: $\frac{10}{6}$ or $\frac{5}{3}$, Write each amount of leftover pie as a fraction and add. $\frac{3}{6} + \frac{2}{6} + \frac{5}{6} = \frac{10}{6} \div \frac{2}{2} = \frac{5}{3}$
- b. 1) Convert the mixed number to a decimal. $10 \div 6 = 1.666666$ or $5 \div 3 = 1.666666$. 2) Rounding 1.6666... to the nearest tenth gives an answer of 1.7.

Worksheet 2

1. D. $\frac{1}{5}$
2. D. $36, 35\frac{3}{4}, 35\frac{5}{8}, 35.5, 35\frac{7}{16}$
3. B. $1\frac{1}{12}$
4. C. .638
5. D. \$1,700-\$2,000
6. C. 15,625
7. A. 20
8. B. 3
9. a. 4 pounds of hot dogs. b. see below. c. 1 pound
- a. Student answers should reflect the following concepts. 1) The purchase price is dependent upon the "unit" prices. For example: Turkey sells as a 2 lb. unit. If 6 pounds is purchased, then Chris and Carter want 3 units. 2) Since the unit price was \$8 for 2 lb., they want 3 of the turkey units. 3) Add up the purchases and subtract the total from \$50. $50 - (3 \times 8 + 2 \times 7 + 1 \times 2 + 2 \times 3) = 4$. 4) Then check the price of hotdogs. Hotdogs sell for 2 lbs for 2 dollars or \$1 a pound.
- b. 1 pound, 1) Subtract to find the savings and 2) multiply by the number of pounds purchased. $2 \times (\$3 - \$2.50) = 1.00$. 3) Hotdogs sell for \$2 for 2 lbs. or \$1 a pound.
10. A. $\frac{75}{100} = \frac{s}{52.99}$

Worksheet 3

1. C. 400
2. C. 6
3. B. 1.6 lbs.
4. C. 430
5. A. 90 hrs.
6. C. 43¢
7. B. \$339.76
8. D. 28 qts.

9. B. 130 mi

10. B. $\frac{2}{3} < \frac{5}{9}$



Worksheet 4

1. The teams would win 15 games. Answers should include the solution to the problem: $20 \times \frac{3}{4} = 15$
2. Pythagleo needs $2\frac{3}{4}$ cups of sugar. Answers should include the solution to the problem: $2\frac{1}{2} \times \frac{1}{2} + 1\frac{1}{2} \times 1 = \frac{5}{4} + \frac{3}{2} = 2\frac{3}{4}$
3. B. 25%
4. 60% of the candy was left. Answers should include the solution to the problems: 1) $\frac{5}{5} - \frac{2}{5} = \frac{3}{5}$ and 2) $\frac{3}{5} \times \frac{20}{20} = \frac{60}{100}$ (or $3 \div 5 = .6$) or 60%
5. 8 tablecloths could be made. Answers should include the solution to the problem: $20 \div 2\frac{1}{2} = 8$
6. Percent: 60%. Decimal .6. Answers should include the solution to the problem: $12 \div 20 = .6$ or 60%
7. Chris had the higher average. Answers should include the solution to the problems: 1) $12 \div 50 = .24$ or .240 and 2) $0.245 > 0.240$