1.1 Fractions   Solutions
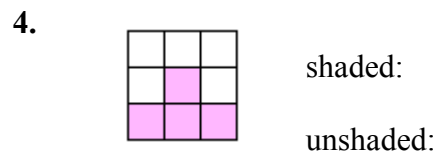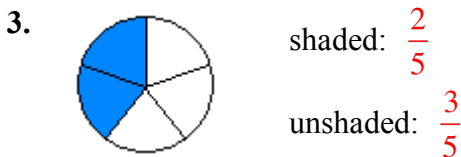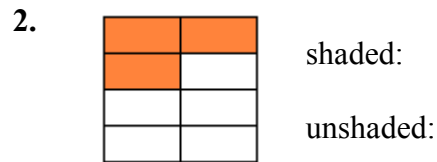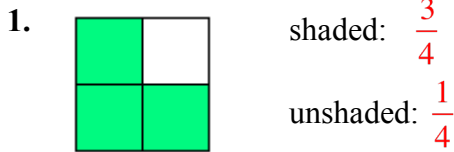
Write the fraction representing the shaded amount, and the fraction representing the unshaded amount.

1.
shaded: $\dfrac{3}{4}$

unshaded: $\dfrac{1}{4}$

2.
shaded:

unshaded:

3.
shaded: $\dfrac{2}{5}$

unshaded: $\dfrac{3}{5}$

4.
shaded:

unshaded:

Simplify each fraction completely (reduce to lowest terms):

5. $\dfrac{6}{8} = \dfrac{6 \div 2}{8 \div 2} = \dfrac{3}{4}$

6. $\dfrac{15}{35}$

7. $\dfrac{14}{49} = \dfrac{14 \div 7}{49 \div 7} = \dfrac{2}{7}$

8. $\dfrac{48}{72}$

Write the requested fraction/s:

9. A professional basketball player made 7 free-throws out of 11 attempts. What fraction of the free-throws did he make?
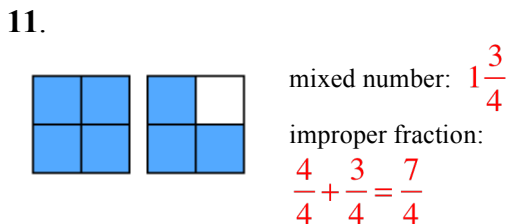
$\dfrac{\text{free-throws made}}{\text{free-throws attempted}} = \dfrac{7}{11}$

10. A professional basketball player made 8 free-throws in 11 attempts.
(a) What fraction of the free-throws did he make?

(b) What fraction of the free-throws did he miss?

Write each shaded amount as both mixed number and as an improper fraction:

11.

mixed number: $1\dfrac{3}{4}$

improper fraction:
$\dfrac{4}{4} + \dfrac{3}{4} = \dfrac{7}{4}$

12.

mixed number:

improper fraction:

Answers: **1.** $\dfrac{3}{4}, \dfrac{1}{4}$; **3.** $\dfrac{2}{5}, \dfrac{3}{5}$; **5.** $\dfrac{3}{4}$; **7.** $\dfrac{2}{7}$; **9.** $\dfrac{7}{11}$; **11.** $1\dfrac{3}{4}, \dfrac{7}{4}$

Change each improper fraction to a mixed number or whole number:

13. $\dfrac{5}{3} \Rightarrow 3\overline{)5}\,^{1\ R\ 2} \Rightarrow 1\dfrac{2}{3}$

$\dfrac{3}{2}$

14. $\dfrac{23}{4}$

Change each mixed number to an improper fraction.

15. $1\dfrac{4}{5} = \dfrac{5 \bullet 1 + 4}{5} = \dfrac{9}{5}$

16. $2\dfrac{1}{3}$

Add, subtract, multiply, or divide. Reduce answers if possible.

17. $\dfrac{7}{12} + \dfrac{1}{12} = \dfrac{8}{12} = \dfrac{8 \div 4}{12 \div 4} = \dfrac{2}{3}$

18. $\dfrac{7}{8} - \dfrac{3}{8}$

19. $\dfrac{7}{8} - \dfrac{5}{12} = \dfrac{7 \bullet 3}{8 \bullet 3} - \dfrac{5 \bullet 2}{12 \bullet 2}$

$ = \dfrac{21}{24} - \dfrac{10}{24} = \dfrac{11}{24}$

20. $\dfrac{7}{12} - \dfrac{1}{3}$

21. $\dfrac{3}{5} \bullet \dfrac{2}{9} = \dfrac{\cancel{3}^{1}}{5} \bullet \dfrac{2}{\cancel{9}^{3}} = \dfrac{1 \bullet 2}{5 \bullet 3} = \dfrac{2}{15}$

22. $\dfrac{6}{8} \bullet \dfrac{4}{5}$

23. $\dfrac{3}{8} \div \dfrac{5}{12} = \dfrac{3}{8} \bullet \dfrac{12}{5} = \dfrac{3}{\cancel{8}^{2}} \bullet \dfrac{\cancel{12}^{3}}{5} = \dfrac{3 \bullet 3}{2 \bullet 5} = \dfrac{9}{10}$

24. $\dfrac{7}{9} \div \dfrac{2}{3}$

25. $5\dfrac{3}{5} \div 4 = \dfrac{5 \bullet 5 + 3}{5} \div \dfrac{4}{1} = \dfrac{28}{5} \bullet \dfrac{1}{4}$

$ = \dfrac{\cancel{28}^{7}}{5} \bullet \dfrac{1}{\cancel{4}^{1}} = \dfrac{7 \bullet 1}{5 \bullet 1} = \dfrac{7}{5}$

26. $10 \div 2\dfrac{1}{2}$

Answers: 1**3.** $1\dfrac{2}{3}$; **15.** $\dfrac{9}{5}$; **17.** $\dfrac{2}{3}$; **19.** $\dfrac{11}{24}$; **21.** $\dfrac{2}{15}$; **23.** $\dfrac{9}{10}$; **25.** $\dfrac{7}{5}$

27. In order to run electric power to his house, Jason must dig a trench $\frac{5}{8}$ of a mile long. If he has already dug $\frac{3}{10}$ of a mile of trench, how much does he have left to dig?

$$\frac{5}{8} - \frac{3}{10} = \frac{5 \cdot 5}{8 \cdot 5} - \frac{3 \cdot 4}{10 \cdot 4} = \frac{25}{40} - \frac{12}{40} = \frac{13}{40} \text{mile}$$

28. Jennifer mixes $1\frac{3}{8}$ pounds of cashews, $2\frac{1}{2}$ pounds of peanuts, and $2\frac{1}{4}$ pounds of almonds, how many ponds of mixed nuts will it make?

29. If $\frac{3}{4}$ pound of fudge candy is cut into 12 equal pieces, how much will each piece weigh?

$$\frac{3}{4} \div 12 = \frac{3}{4} \cdot \frac{1}{12} = \frac{\cancel{3}^1}{4} \cdot \frac{1}{\cancel{12}^4} = \frac{1}{16} \text{pound}$$

30. Maria ran $1\frac{3}{8}$ miles every day for 12 days. How many total miles did she run during the 12 day period?

Answers: **27.** $\frac{13}{40}$ mile ; **29.** $\frac{1}{16}$ pound