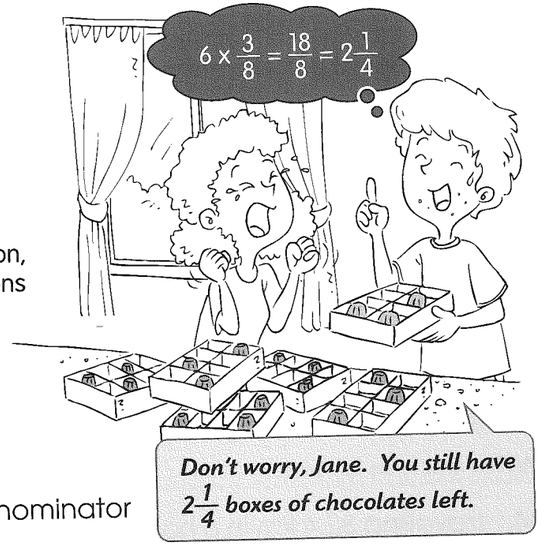
Fractions

- write equivalent fractions
- add, subtract, and multiply fractions
- solve problems that involve the addition, subtraction, and multiplication of fractions



Find an equivalent fraction for each fraction.

1. **By using multiplication:**
multiply the numerator and denominator by the same number

a. $\frac{3}{7} = \frac{3 \times 5}{7 \times 5}$ = ____

b. $\frac{2}{5} = \frac{2 \times 3}{5 \times \square}$ = ____

c. $\frac{5}{6} = \frac{5 \times \square}{6 \times 4}$ = ____

2. **By using division:**
divide the numerator and denominator by the same number

a. $\frac{12}{15} = \frac{12 \div 3}{15 \div 3}$ = ____

b. $\frac{8}{10} = \frac{8 \div 2}{10 \div \square}$ = ____

c. $\frac{5}{20} = \frac{5 \div \square}{20 \div 5}$ = ____

3. $\frac{5}{15}$ = ____

4. $\frac{1}{4}$ = ____

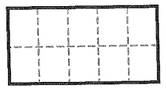
5. $\frac{16}{30}$ = ____

6. $\frac{10}{25}$ = ____

Find the equivalent fractions for each pair of fractions so that the equivalent fractions have the same denominator. Then colour the correct number of parts to find the sum.

7. $\frac{1}{2}$ and $\frac{2}{5}$

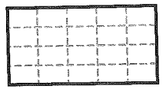
$\frac{1}{2}$ = ____ $\frac{2}{5}$ = ____



$\frac{1}{2}$ and $\frac{2}{5}$ = ____

8. $\frac{3}{4}$ and $\frac{1}{10}$

$\frac{3}{4}$ = ____ $\frac{1}{10}$ = ____



$\frac{3}{4}$ and $\frac{1}{10}$ = ____

Adding fractions with different denominators:

1st Find the least common denominator (L.C.D.) and equivalent fractions.

2nd Add the numerators and keep the denominator the same.

3rd Write the answer in simplest form.

e.g. $\frac{1}{4} + \frac{7}{12} = \frac{3}{12} + \frac{7}{12} = \frac{10}{12} = \frac{5}{6}$

Add the numbers.

The L.C.M. of 4 and 12 is 12. So, 12 is the L.C.D.

Fractions in Simplest Form:

A fraction is in its simplest form if the greatest common factor of the numerator and denominator is 1.

e.g. $\frac{2}{7}$ ← in simplest form

Do the addition. Write the answers in simplest form.

9. $\frac{3}{5} + \frac{1}{10}$

= ____ + $\frac{1}{10}$

= ____

10. $\frac{3}{4} + \frac{1}{5}$

= $\frac{\quad}{20}$ + ____

= ____

11. $\frac{3}{10} + \frac{8}{15} = \frac{30}{30} +$ ____

= ____

= ____ ← in simplest form

12. $\frac{5}{9} + \frac{7}{36}$ = ____ = ____

13. $\frac{2}{7} + \frac{5}{14}$ = ____ = ____

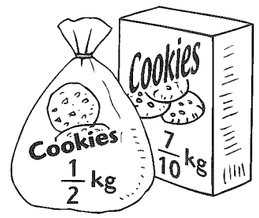
14. $\frac{3}{4} + \frac{4}{5}$ = ____ = ____

Write the answer as a mixed number.

15. $\frac{1}{2} + \frac{17}{18}$ = ____ = ____

Solve the problems.

16. What is the total weight of one bag and one box of cookies?



____ = ____ ____

17. Sue has $\frac{5}{6}$ kg of cookies. If she buys a bag of cookies, how many kg of cookies will she have in all?

____ = ____ ____

Subtracting fractions with different denominators:

1st Find the least common denominator and equivalent fractions.

2nd Subtract the numerators and keep the denominator the same.

3rd Write the answer in simplest form.

e.g. $\frac{5}{6} - \frac{1}{3}$ ← L.C.D. = 6

$= \frac{5}{6} - \frac{2}{6}$

$= \frac{3}{6}$ ← Subtract the numerators; keep the denominator the same.

$= \frac{1}{2}$ ← in simplest form

Do the subtraction. Write the answers in simplest form.

18. $\frac{9}{10} - \frac{1}{2}$ ← L.C.D. = _____

$= \frac{9}{10} -$ _____

$=$ _____

19. $\frac{5}{6} - \frac{11}{15}$ ← L.C.D. = _____

$=$ _____ $-$ _____

$=$ _____

20. $\frac{2}{3} - \frac{1}{6} =$ _____

21. $\frac{3}{10} - \frac{2}{15} =$ _____

22. $\frac{3}{4} - \frac{5}{12} =$ _____

23. $\frac{4}{5} - \frac{3}{10} =$ _____

24. $\frac{17}{20} - \frac{3}{5} =$ _____

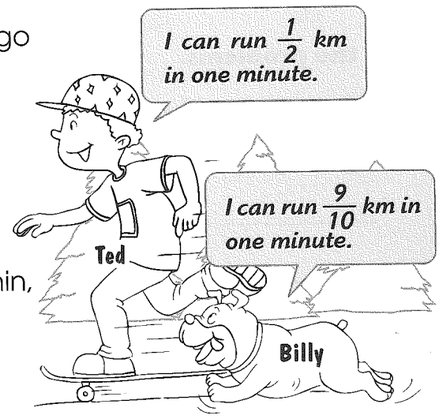
25. $\frac{8}{15} - \frac{1}{3} =$ _____

Solve the problems. Write the answers in simplest form.

26. How much farther does Billy the Dog go than Ted in one minute?

_____ = _____

_____



27. If Billy slows down his speed by $\frac{1}{6}$ km/min, what will be his new speed?

_____ = _____

_____

Do the multiplication using addition. Write the answers in simplest form.

28. $3 \times \frac{5}{8} = \frac{5}{8} +$ _____ $+$ _____

$= \frac{\quad}{8}$

$=$ _____

29. $4 \times \frac{5}{6} = \frac{5}{6} +$ _____

$= \frac{\quad}{6}$

$=$ _____

Do the multiplication. Write the answers in simplest form.

30. $6 \times \frac{4}{9} =$ _____

31. $3 \times \frac{2}{7} =$ _____

32. $8 \times \frac{3}{10} =$ _____

33. $5 \times \frac{4}{15} =$ _____

34. $\frac{3}{8} \times 6 =$ _____

35. $\frac{5}{7} \times 4 =$ _____

36. $\frac{7}{10} \times 5 =$ _____

37. $3 \times \frac{7}{12} =$ _____

Hint

A whole number x A fraction

1st Multiply the numerator by the whole number.

2nd Simplify the answer.

e.g. $5 \times \frac{8}{15}$

$= \frac{40}{15}$

$= 2\frac{2}{3}$ ← Write as a mixed number.

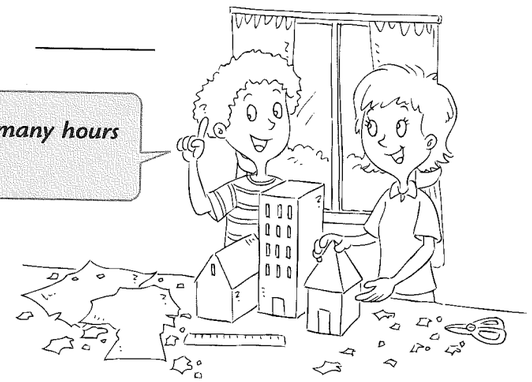
38. Joe drinks $\frac{3}{5}$ L of milk every day. How much milk does Joe drink in a week?

_____ = _____ _____

39. A basket of apples weighs $\frac{11}{12}$ kg. What is the total weight of 3 baskets of red apples and 5 baskets of green apples?

_____ = _____ _____

40. *If it takes us $\frac{5}{6}$ h to make 3 models, how many hours will it take to make 24 models?*

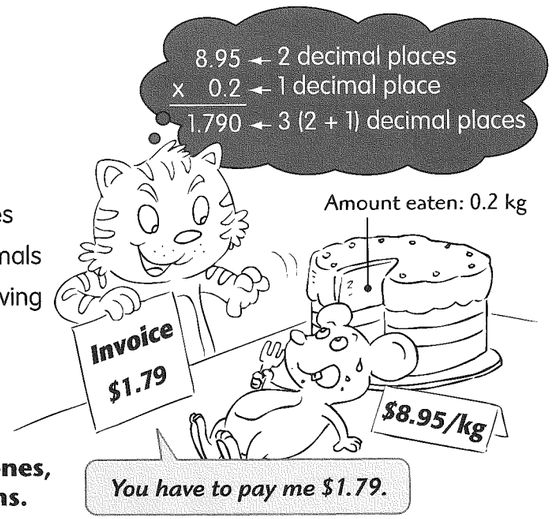


_____ = _____

_____

Decimals

- round decimals to thousandths
- estimate and find sums and differences
- follow the order of operations on decimals
- solve problems with decimals involving different operations



Round the decimal to the nearest ones, tenths, hundredths, and thousandths.

1. 2.8037 _____ _____ _____
2. 11.5491 _____ _____ _____
3. 4.0675 _____ _____ _____
4. 25.8023 _____ _____ _____

Estimate the sum and difference of each pair of decimals by rounding the decimals to the nearest ones. Then find the actual sums and differences.

5. 17.62, 8.193

Estimate		Actual	
sum	difference	sum	difference
+ _____			

6. 9.087, 24.3

Estimate		Actual	
sum	difference	sum	difference

Estimate the product. Then put a decimal point in the correct place of the given product with the help of the estimated answer.

7. 2.6 x 5 = 130
   Estimate: 3 x _____ = _____
8. 4.38 x 2 = 876
   Estimate: _____
9. 5.4 x 0.6 = 324
   Estimate: _____
10. 7.9 x 2.3 = 1817
    Estimate: _____

Do the multiplication.

11.
```
  22.4   ← 1 decimal place
x  1.8   ← 1 decimal place
-------
 [ ]     ← 8 x 224
 [ ]     ← 10 x 224
-------
 [ ]     ← 2 decimal places
```

12.
```
  1.76   ← 2 decimal places
x  3.7   ← 1 decimal place
-------
 [ ]     ← 7 x 176
 [ ]     ← 30 x 176
-------
 [ ]     ← 3 decimal places
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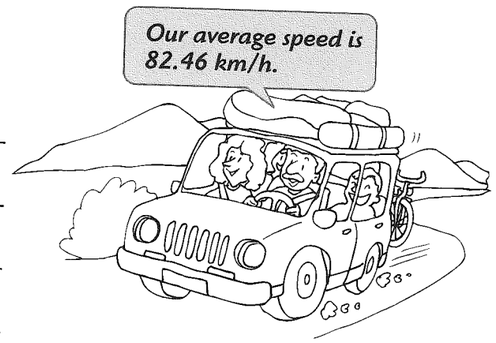
13. 8.7 x 3.1
14. 14.6 x 0.5
15. 1.06 x 4.3
16. 13.4 x 0.8

Solve the problems.

17. Distance travelled
    a. in 1.6 h: _____ = _____
    b. in 2.3 h: _____ = _____
    c. in 3.5 h: _____ = _____
    d. in 4.7 h: _____ = _____



Decimals ÷ Decimals

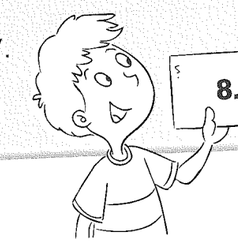
1st Change the divisor into a whole number by moving the decimal point to the right end, and move the decimal point of the dividend the same number of places.

2nd Divide as "Decimals ÷ Whole numbers".

$1.3\overline{)8.32}$ Rewrite. $13\overline{)83.2}$

Move 1 decimal place to the right.

$$\begin{array}{r} 6.4 \\ 13\overline{)83.2} \\ 78 \\ \hline 52 \\ 52 \end{array}$$



8.32 ÷ 1.3 = 6.4

Estimate. Then do the division.

18. 41.76 ÷ 5.8 = _____

Estimate: 42 ÷ _____ = _____

$5.8\overline{)41.76}$ ➡ ⟌

19. 32.24 ÷ 2.08 = _____

Estimate: _____

$2.08\overline{)32.24}$ ➡ ⟌

20. 12 ÷ 6.25 = _____

Estimate: _____

$6.25\overline{)12}$ ➡ ⟌

21. 21.6 ÷ 1.5 = _____

Estimate: _____

$1.5\overline{)21.6}$ ➡ ⟌

Do the division.

22. 39.52 ÷ 1.6 = _____

23. 15.036 ÷ 2.8 = _____

24. 9.66 ÷ 2.3 = _____

25. 19.18 ÷ 3.5 = _____

26. 15.6 ÷ 2.4 = _____

27. 35.524 ÷ 4.15 = _____

Find the answers.

28. (1.6 + 2.3) x 4

29. 7.5 – 5 ÷ 2.5 x 1.25

30. 4.6 x 1.3 – 1.05 ÷ 0.5

31. 8.4 + 2.73 ÷ 1.3 = _____

32. 11.85 ÷ (3.21 + 6.27) x 5 = _____

33. 3.5 x 4.2 – 5.42 = _____

34. 10.32 ÷ 3.44 + 1.3 x 3.6 = _____

35. 29.61 ÷ (1.73 + 2.97) = _____

36. (8.96 + 1.8) x (10.54 – 6.09) = _____

Check the correct number sentence that describes each situation. Then solve it. Show your work.

37. Mrs. Kay bought 4 bags of 2.83-kg flour and used 3.07 kg of it to make bread. Then she put the rest of the flour equally into 5 jars. How much flour is there in each jar?

(A) (2.83 x 4 – 3.07) ÷ 5

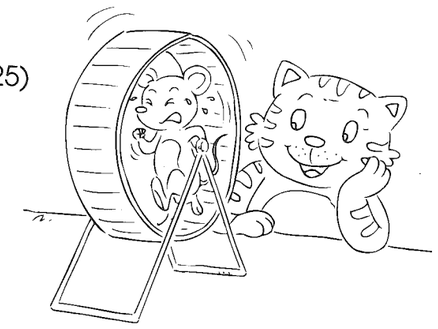
(B) (3.07 – 2.83) x 4 ÷ 5

There are _____ kg of flour in each jar.

38. Tommy the Mouse ran at a speed of 30.6 km/h in the first 0.35 h and 25.2 km/h in the next 0.25 h. What was his average speed?

(A) (30.6 + 25.2) ÷ (0.35 + 0.25)

(B) (30.6 x 0.35 + 25.2 x 0.25) ÷ (0.35 + 0.25)



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