

## Check Your Understanding

### Practise

For help with #4 and #5, refer to Example 1 on page 231.

4. Calculate.

a)  $\frac{3}{4} - \frac{1}{2} \times \frac{2}{3}$       b)  $2\frac{1}{5} \div \left(\frac{4}{5} - \frac{1}{4}\right)$

c)  $3\frac{1}{2} + 2\frac{1}{2} \times \left(1\frac{1}{4} - \frac{3}{4}\right)$

5. Calculate.

a)  $\left(\frac{5}{6} + \frac{2}{3}\right) \times \frac{3}{7}$       b)  $\frac{1}{2} + \frac{3}{5} \div \frac{3}{4} \div \frac{2}{5}$

c)  $1\frac{2}{5} \times 2\frac{1}{2} \div \left(1\frac{1}{8} - \frac{2}{3}\right)$

### Apply

For help with #6, refer to Example 2 on page 232.

6. Leo earns \$16/h as a gardener in a city park. For time worked above 35 h in a week, he earns time-and-a-half. How much does he earn for each of the following numbers of hours worked in a week?

a) 36 h    b) 39 h    c) 42 h    d)  $37\frac{1}{2}$  h

7. Two thirds of the land on a farm is used for grazing beef cattle. The rest of the land is used to grow crops. Half of the land for crops is used to grow corn. What fraction of the land on the farm is used to grow corn?

8. Melissa and Shinzo found  $\frac{1}{2}$  a pitcher of iced tea in the fridge. They equally shared  $\frac{3}{4}$  of the iced tea.

- a) What fraction of a pitcher of iced tea did each of them drink?  
 b) What fraction of a pitcher of iced tea was left over?

9. Five sevenths of the 28 students in a grade 8 class visited a science museum on a field trip. How many students did not go on the trip? Solve the problem in two different ways.



10. Brass is an alloy that contains the metals copper and zinc. Copper typically accounts for  $\frac{3}{5}$  of the mass of a piece of brass.

- a) What is the mass of copper in 175 g of brass?  
 b) What mass of brass contains 90 g of copper?  
 c) What mass of brass contains 50 g of zinc?

11. The advertising space in a hockey team's yearbook is sold in fractions of a page. The advertising space sold in one edition of the yearbook is shown in the table.

Size of Advertisement	Price	Number Sold
$\frac{1}{2}$ page	\$110	3
$\frac{1}{4}$ page	\$60	5
$\frac{1}{8}$ page	\$35	12

Calculate the following.

- a) the total number of pages of advertising sold  
 b) the total revenue from advertising  
 c) the average revenue per page of advertising sold

P234

$$4a) \frac{3}{4} - \left( \frac{1}{2} \times \frac{2}{3} \right)$$

$$\frac{3}{4} - \frac{2}{6}$$

$$\frac{3 \times 3}{4 \times 3} - \frac{1 \times 4}{3 \times 4}$$

$$\frac{9}{12} - \frac{4}{12} = \frac{5}{12}$$

$$4b) 2\frac{1}{5} \div \left( \frac{4}{5} - \frac{1}{4} \right)$$

$$\frac{11}{5} \div \left( \frac{16}{20} - \frac{5}{20} \right)$$

$$\frac{11}{5} \div \frac{11}{20}$$

$$\frac{11}{5} \times \frac{20}{11} = \frac{220}{55} = 4$$

$$4c) 3\frac{1}{2} + 2\frac{1}{2} \times \left( 1\frac{1}{4} - \frac{3}{4} \right)$$

$$3\frac{1}{2} + 2\frac{1}{2} \times \left( \frac{5}{4} - \frac{3}{4} \right)$$

$$3\frac{1}{2} + 2\frac{1}{2} \times \frac{2}{4}$$

$$3\frac{1}{2} + \left( \frac{5}{2} \times \frac{2}{4} \right)$$

$$3\frac{1}{2} + \frac{10}{8}$$

$$3\frac{1}{2} + \frac{5}{4}$$

$$\frac{14}{4} + \frac{5}{4} = \frac{19}{4} = 4\frac{3}{4}$$

P234

$$5a) \left( \frac{5}{6} + \frac{2}{3} \right) \times \frac{3}{7}$$

$$\left( \frac{5}{6} + \frac{4}{6} \right) \times \frac{3}{7}$$

$$\frac{9}{6} \times \frac{3}{7} = \frac{27}{42} = \frac{9}{14}$$

$$5b) \frac{1}{2} + \left( \frac{3}{5} \div \frac{3}{4} \right) \div \frac{2}{5}$$

$$\frac{1}{2} + \left( \frac{3}{5} \times \frac{4}{3} \right) \div \frac{2}{5}$$

$$\frac{1}{2} + \frac{12}{15} \div \frac{2}{5}$$

$$\frac{1}{2} + \frac{4}{5} \div \frac{2}{5}$$

$$\frac{1}{2} + \frac{4}{5} \times \frac{5}{2}$$

$$\frac{1}{2} + \frac{20}{10}$$

$$\frac{1}{2} + \frac{4}{2} = \frac{5}{2} = 2\frac{1}{2}$$

$$5c) \frac{1}{5} \times 2\frac{1}{2} \div \left( 1\frac{1}{8} - \frac{2}{3} \right)$$

$$\frac{7}{5} \times \frac{5}{2} \div \left( \frac{9}{8} - \frac{2}{3} \right)$$

$$\frac{7}{5} \times \frac{5}{2} \div \left( \frac{27}{24} - \frac{16}{24} \right)$$

$$\left( \frac{7}{5} \times \frac{5}{2} \right) \div \frac{11}{24}$$

$$\frac{35}{10} \div \frac{11}{24}$$

$$\frac{7}{2} \div \frac{11}{24}$$

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$$\frac{7}{2} \div \frac{11}{24}$$

$$\frac{7}{2} \times \frac{24}{11} = \frac{168}{22} = 7\frac{14}{22}$$

$$= 7\frac{7}{11}$$