What Do I Need to Know?

☑ Here are some fractions and decimals you should know.

$\frac{1}{2} = 0.5$

$\frac{1}{5} = 0.2$

$\frac{1}{20} = 0.05$

$\frac{1}{3} = 0.\overline{3}$

$\frac{1}{8} = 0.125$

$\frac{1}{100} = 0.01$

$\frac{1}{4} = 0.25$

$\frac{1}{10} = 0.1$

$\frac{1}{1000} = 0.001$

☑ Percent is the number of parts per hundred.
A percent can be written as a fraction and as a decimal.

☑ Here are some fractions, decimals, and percents that you should also know.

$\frac{1}{4} = 0.25 = 25\%$

$\frac{1}{20} = 0.05 = 5\%$

$\frac{1}{2} = 0.5 = 50\%$

$\frac{1}{10} = 0.1 = 10\%$

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

$\frac{1}{5} = 0.2 = 20\%$

☑ The order of operations with whole numbers applies to decimals.
- Do the operations in brackets first.
- Then divide and multiply, in order, from left to right.
- Then add and subtract, in order, from left to right.

Math

Your World

When you buy a Canada Savings
Bond (CSB), you are lending
the Canadian government money.
The government pays you
for borrowing your money.
It pays a percent of what you invested.
In 2006, if you invested money for 1 year,
the government paid you 2%
of the amount you invested.
Suppose you bought a $2000 CSB in 2006.
How much will the government pay you for 1 year?
What if you bought a $2500 CSB?

1. Write each fraction as a decimal. Identify each decimal as terminating or repeating.

a) $\frac{3}{5}$ b) $\frac{5}{6}$ c) $\frac{3}{8}$ d) $\frac{3}{20}$

2. Write each decimal as a fraction or a mixed number in simplest form.

a) 0.55   b) $1.\overline{3}$

c) 0.8   d) $0.\overline{07}$

3. a) Use any method. Order these numbers from least to greatest. Explain the method you used.

$\frac{5}{4}, 1\frac{1}{16}, \frac{3}{6}, 1.1, \frac{5}{8}$

b) Use a different method to order the numbers, to verify your answer in part a.

4. In each ordered set, identify the number that has been placed incorrectly. Explain how you know.

a) $2\frac{1}{3}, 2.25, \frac{17}{6}, 2\frac{11}{12}$

b) $\frac{3}{5}, \frac{9}{10}, \frac{21}{20}, 1\frac{3}{15}, 1.1$

5. Two decimals have a sum of 3.41. What might the decimals be? Find as many answers as you can.

6. Asafa Powell of Jamaica holds the men's world record for the 100-m sprint, with a time of 9.77 s. Florence Griffith Joyner of the United States holds the women's world record, with a time of 10.49 s. What is the difference in their times?

7. Kiah works at the library after school. She earns $7.65/h. She usually works 15.5 h a week.

a) What does Kiah earn in a week? Use estimation to check your answer.

b) One week Kiah only works one-half the hours she usually works. What are her earnings that week?

8. Lok needs 1.2 m of fabric to make a tote bag. He finds two fabrics he likes. One fabric costs $7.59/m and the other fabric costs $6.29/m. How much money will Lok save if he buys the less expensive fabric?

9. Estimate. Which quotients are:

i) greater than 100?

ii) less than 50?

Calculate the quotients that are less than 50.

a) 259.8 ÷ 1.65

b) 35.2 ÷ 0.2

c) 175.08 ÷ 0.8

d) 93.8 ÷ 22.4

e) 162.24 ÷ 31.2

f) 883.3 ÷ 36.5

10. The area of a rectangle is 3.75 m². Its length is 0.6 m. What is the width of the rectangle?

11. Evaluate. Use the order of operations.
a) $8.11 + 6.75 \times 5.6 - 2.12$
b) $3.78 \times 2.25 - 4.028 \div 1.52$

12. a) Simplify.
    i) $1.2 + 2.8 \times 2.1 + 3.6$
    ii) $1.2 \times 2.8 + 2.1 \times 3.6$
    iii) $1.2 \times (2.8 + 2.1) + 3.6$
    iv) $1.2 + 2.8 + 2.1 \times 3.6$
b) All the expressions in part a have the same numbers and operations. Why are the answers different?

13. Write each percent as a fraction and as a decimal. Sketch number lines to illustrate.
a) 80%   b) 12%
c) 2%   d) 63%

14. Write each fraction as a decimal and as a percent. Sketch number lines to illustrate.
a) $\frac{14}{25}$ b) $\frac{19}{20}$
c) $\frac{7}{50}$ d) $\frac{1}{5}$

15. There are 35 students in a Grade 7 class. On one day, 20% of the students were at a sports meet. How many students were in class?

16. Find the sale price before taxes of each item.
a) video game: 15% off $39
b) lacrosse stick: 25% off $29
c) fishing rod: 30% off $45

17. A souvenir Olympic hat sells for $29.99.
a) Russell lives in Newfoundland where there is a sales tax of 14%. Calculate the final cost of the hat in Newfoundland.
b) Jenna lives in Alberta where the GST tax is 6%. Calculate the final cost of the hat in Alberta.
c) What is the difference between the final costs of the hat in Newfoundland and Alberta?

18. Madeleine received good service in a restaurant. She left the waitress a tip of 20%. Madeleine's bill was $32.75. How much tip did the waitress receive? Show your work. Draw a number line to illustrate your answer.

Practice Test

1. Write each decimal as a fraction in simplest form and each fraction as a decimal.
   a) 0.004
   b) 0.64
   c) $0.\overline{3}$
   d) $\frac{51}{200}$
   e) $\frac{3}{4}$

2. Ryan earns $18.00 a day walking dogs.
   He walked dogs 5 days last week.
   a) How much money did Ryan earn last week?
   Ryan is saving to buy inline skating equipment.
   The skates cost $59.95.
   A helmet costs $22.90.
   A set of elbow, knee, and wrist guards costs $24.95.
   b) Does Ryan have enough money to buy the equipment?
      Show your work.
   c) If your answer to part b is no, how much more money does Ryan need?
      What assumptions did you make?

3. Maria stated that $1\frac{5}{6}$ is between 1.8 and $\frac{13}{7}$.
   Do you agree?
   Give reasons for your answer.

4. Evaluate.
   a) $3.8 + 5.1 \times 6.4 - 1.7$
   b) $3.54 \div 0.3 + (2.58 \times 1.5)$

5. Last spring, 40 cats were adopted from the local animal shelter.
   This spring, the number of cats adopted dropped by 35%.
   How many cats were adopted this spring?
   Draw a number line to show your answer.

6. The regular price of a pair of shoes is $78.00.
   The shoes are on sale for 25% off.
   a) What is the sale price of the shoes?
   b) How much money is saved by buying the shoes on sale?
   c) The GST is 6%. How much GST would be added to the sale price?
   d) What is the final price of the shoes?