Chapter 1

List the numbers in order from least to greatest.

1. 15.271, 15.072, 7.152, 1275, 909.001

2. 26 584, 8456, 1 000 001, 25 048, 52 846

Evaluate.

3. $(5^2)^2$ **4.** $(2^3)^2$ **5.** $(4^3)^2$

Evaluate. Write your answers in exponential form.

6. $3^2 \times 3^2 \times 3$ **7.** $6^4 \div 6^2$ **8.** $4^5 \div 4^4 \times 4^2$

Write each number in standard form.

9. $\frac{1}{10^2}$ **10.** -10^3 **11.** 10^7

Write each number in scientific notation

12. 28 000 000 **13.** 0.0008 **14.** 156 000

Write each number in standard form.

15. 8.2×10^5 **16.** 2.7×10^{-6} **17.** 5.29×10^{-4}

Write each of the following as the quotient of two integers in lowest terms.

18. $3\frac{1}{2}$ **19.** 0.8 **20.** −1.9

Express in lowest terms.

21. $\frac{4}{10}$ **22.** 40 to 20 **23.** 16:24:40

Draw in 3 different ways.

24. a rectangle with 50% shaded

25. a square with 75% shaded

Write as a percent.

26. $\frac{23}{50}$ **27.** $\frac{17}{25}$ **28.** 3:5 **29.** $\frac{5}{2}$

30. 0.6 **31.** 0.07 **32.** 2.35 **33.** 3:2

34. 0.452 **35.** 3:8 **36.** $\frac{1}{3}$ **37.** 1.2

Write as a decimal.

38. 53.6% **39.** $4\frac{1}{2}\%$ **40.** 145% **41.** $\frac{1}{4}\%$

Evaluate.

42. $\sqrt{361}$ **43.** $\sqrt{2.25}$

Chapter 2

Express all answers in lowest terms.

Add.

1. $\frac{3}{8} + \frac{1}{8}$ **2.** $\frac{1}{2} + \frac{2}{5}$ **3.** $\frac{2}{3} + \frac{3}{4}$

4. $2\frac{1}{2} + \frac{1}{4}$ **5.** $1\frac{1}{3} + 1\frac{1}{2}$ **6.** $3\frac{5}{6} + 1\frac{1}{2}$

Subtract.

7. $\frac{3}{5} - \frac{1}{5}$ **8.** $\frac{5}{8} - \frac{1}{4}$ **9.** $\frac{3}{4} - \frac{2}{3}$

10. $1\frac{1}{2} - \frac{1}{4}$ **11.** $2\frac{1}{6} - \frac{2}{3}$ **12.** $3\frac{1}{2} - 2\frac{3}{5}$

Multiply.

13. $\frac{1}{2} \times \frac{2}{3}$ **14.** $\frac{3}{5} \times \frac{5}{6}$ **15.** $\frac{3}{4} \times \frac{1}{2}$

16. $1\frac{1}{2} \times \frac{1}{4}$ **17.** $1\frac{3}{5} \times 2$ **18.** $1\frac{1}{3} \times 2\frac{1}{2}$

Divide.

19. $3 \div \frac{1}{2}$ **20.** $\frac{1}{3} \div \frac{2}{3}$ **21.** $\frac{3}{5} \div \frac{1}{4}$

22. $1\frac{1}{2} \div 2$ **23.** $1\frac{1}{3} \div \frac{3}{4}$ **24.** $2\frac{1}{2} \div 1\frac{1}{5}$

Evaluate.

25. -2.5×3.7 **26.** 0.125×6.9

27. $9.43 \div 2.30$ **28.** $48 \div (-0.16)$

29. $-3.6 \div (-0.45)$ **30.** $-3.1 + (-1.5)$

31. $-3.125 + 2.375$ **32.** $-4.1 \times (-0.8)$

33. $-0.05 - 0.15$ **34.** $25.22 - (-13.05)$

35. About $\frac{1}{4}$ of Canada's grizzly bears live in the Northwest Territories (NWT). About 5000 grizzlies live in the NWT. About how many live in Canada?

36. The winter high temperature is +5.2°C in Vancouver, and the winter low is −0.2°C. Find the average of these temperatures.

37. Paulo has a piece of moulding 3.6 m in length. He wishes to cut it into smaller pieces, each 0.9 m in length. How many pieces will he have?

Chapter 3

1. Write 3 ratios equivalent to 3:5.

Find the unknown values.

2. $\frac{6}{y} = \frac{12}{10}$ **3.** $\frac{32}{8} = \frac{8}{n}$ **4.** $15:18 = b:6$

5. $m:6:10 = 14:n:20$ **6.** $\frac{27}{45} = \frac{9}{p} = \frac{q}{30}$

7. Greg drove 300 km in 4 h. Claudia drove 400 km in 5 h. Who had the higher average speed?

8. The ratio of baseballs to volleyballs in a box was 7:9. The number of volleyballs was 27. How many baseballs were in the box?

9. A jar contains a total of 66 yellow cubes and green cubes. Maurice pulled out 3 cubes. He had 2 yellow cubes and 1 green cube in his hand. If the ratio of yellow cubes to green cubes is the same in the jar and in his hand, how many yellow cubes and how many green cubes are in the jar?

10. If 7 bananas cost \$3.15, what is the cost of 5 bananas?

In questions 11 and 12, find the unit price.

11. \$26.00 for 6 L of paint

12. 12 pencils for \$1.95

13. If 175 g of yogurt costs \$0.98, and 590 g costs \$2.49, which is the better buy?

14. A drawing of a moose is 7 cm long. The scale is 1:40. What is the actual length, in metres, of a moose?

15. Edmonton is about 1200 km from Whitehorse. How far apart are these cities on a map with a scale of 1:20 000 000?

16. Canada's Marnie McBean and Kathleen Heddle won the women's pairs rowing event at the Barcelona Olympics by rowing 2000 m in 7 min 6.22 s. Find their average speed, to the nearest hundredth of a metre per second.

Chapter 4

Calculate

1. 21% of 350 **2.** 4.5% of 80

3. $12\frac{1}{2}$% of 88 **4.** 0.5% of 250

5. If 20% of a number is 80, what is the number?

6. If 150% of a number is 360, what is the number?

Calculate.

7. 300% of 80 **8.** 200% of 2000

9. 150% of 60 **10.** 110% of 900

Calculate what percent the first number is of the second number.

11. 32, 50 **12.** 130, 65 **13.** 2.5, 12.5

14. The regular price of a pair of jeans is \$78. What is the sale price after a discount of 20%?

15. Linda sells shoes. She earns \$15/h , plus a 5% commission on his sales. One week, she worked for 38 h and had sales of \$690. How much did she earn?

16. A sweater sells for \$84. Find the total cost, including GST and PST, in your province.

17. Luis bought a \$5000 savings bond that paid 7% interest per year. What was the amount after 4 years?

18. The forested land area of the province of Saskatchewan is 178 000 km^2. This is about 31% of the total land area of Saskatchewan. What is the area of the total land area of Saskatchewan?

19. Vancouver has 55 cm of snow per year. Edmonton has 230% as much snow as Vancouver. Ottawa has 175% as much snow as Edmonton. To the nearest centimetre, how much snow does Ottawa have per year?