NAME : _____   DATE : _____

GRADE 8 | TOPIC REVIEW BOOKLET

Topic 1 | Regrouping (Addition and subtraction)
1. $382 - 3 + 47 + 163 - 9 + 18 - 7 + 109$

2. $-3 - - - - - - 7$

3. $-27 - - - 6 + - 35 + - 104 + - - 7 + - 5$

Topic 2 | Relocation (Multiplication and Division)
1. $48 \div 15 \times 30 \div 8$

2. $9 \div 4 \div 7 \div 15 \times 14 \times 5 \times 6$

Topic 3 | Average Problems
1. Albert scored 73% on his first four tests in math. What would he have to score on the fifth test to have an average of 75% on all five tests?

2. Class A, with 10 students, had a total of 120 points on their math test. Class B, with 15 students, got the same number of points. Which class had the best average, Class A or Class B?

Topic 4 | Operations with Integers & Order of Operations
1. $24 \times 2 - (-6) \times (-7)$

2. $9 - 5 \div (8 - 3) \times 2 + 6$

3. $(-2) \times (5) \times (-6)$

4. $[(-9) - (-2)] \times 82 + (-15) \div (-5) - [(-3) + (-2)]$

1

5. $[7 - (-2)] \times 2 + (-12) \div (-4)$

6. $\dfrac{2}{3} + \dfrac{7}{4} \times \dfrac{-8}{14}$

7. The temperature outside in -5˚C on Monday. Overnight it drops by 3˚C. Between 9am and noon the next day it rises 2˚C. What is the temperature on Tuesday at noon?

8. A golf tournament is nine rounds. Katie shot -1 in two rounds, -2 on one round, and +3 on another two rounds, +1 on three rounds and a +5 on one round. What was Katie's final score?

Topic 5 | Algebra

1. $3x - 7 + 5x + 8$

2. $m + m + 3m + 4$

3. $13 = 3x - 2$

4. $-8a + 11 = 27$

5. $-5(q - 11) = 70$

6. $4(p - 6) = -4$

7. $\dfrac{n}{3} - 2 = 10$

8. $\dfrac{t}{-9} + 8 = -5$

9. $\dfrac{n}{5} + 3 = -4$

10. Justin has 4 more marbles than Lee, and Cindy has 3 times as many marbles as Justin. If Lee has n marbles, write an expression that could be used to determine how many marbles Cindy has.
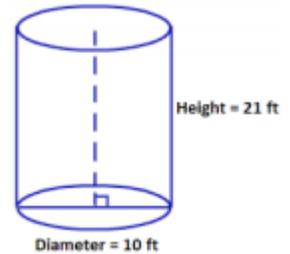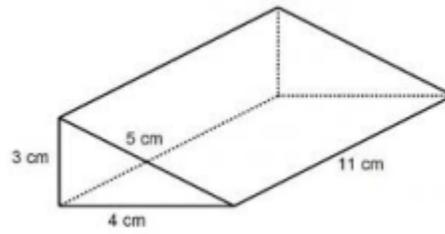
Topic 6 | Geometry

1. A rectangle's length is 4 times bigger than its width. If the width of the rectangle is 3.5cm. What is the perimeter and area of the rectangle?

2. Solve:

3 cm
4 cm

6 cm
5 cm
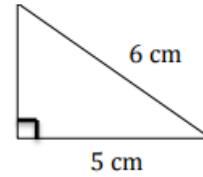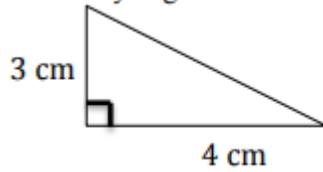
3. Calculate the surface area and volume:

16 cm
8 cm
20 cm

5 cm
3 cm
11 cm
4 cm

Height = 21 ft
Diameter = 10 ft
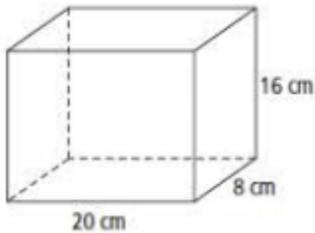
4. A square has an area of 64 cm^2 . What is the length of its sides?

5. Bill is building a garage measuring 9 meters by 12 meters in his back yard. In order to insure the side of his garage meets at a right angle, he measures across the diagonal and gets a length of 16 meters. Do the walls of Bill's garage meet at right angles? Explain your answer and support it with a properly labeled diagram and any necessary workings.

6. Jesse is painting the window trim for his mom. He uses a ladder that is 9 m long. If the base of the ladder is 6 m from the base of the house, how far up the house does the top of the ladder reach? Use a properly labeled diagram and give your answer to one decimal place.

7. Jenny is flying a kite with her friend Jill. The string on her kite is 100 meters long. Jenny and Jill are standing 70 meters apart. If the kit is flying directly above Jill heads, how high is the kite? Use a properly labeled diagram and give your answer to one decimal place.

Topic 7 | Percent

1. You want to purchase a new Computer. The computer costs $449 plus $129 for software. What is the total cost of your purchase including 13% HST?

2. Write each as a fraction, percent, and a decimal.

   a) $\dfrac{3}{8}$ b) 4.25%   c) 4.4 %

3. A field goal kicker was successful 75% of the time. He made 51 field goals. How many kicks did he make in total?

4. Write each ratio in simplest form (and i and ii as a percent).
   i) 6:18   ii) 10:25   iii) 16:12:20   iv) 15:60:45

Topic 8 | Operations with Fractions

1.
$$\frac{1}{6} + \frac{1}{6} =$$ $$\frac{6}{7} - \frac{2}{7} =$$

$$\frac{3}{5} + \frac{1}{4} =$$ $$\frac{7}{8} - \frac{3}{7} =$$

2. $\dfrac{7}{12} \div \dfrac{2}{5} =$ $1\dfrac{7}{8} \div 1\dfrac{1}{4} =$

    $\dfrac{5}{3} \div \dfrac{4}{5} =$ $7 \div \dfrac{2}{3} =$

3. a) $\dfrac{7}{9} - (\dfrac{1}{3} + \dfrac{5}{6}) \div 3$ b) $4 \div \dfrac{2}{3} - 3\dfrac{1}{4} + \dfrac{7}{12}$ c) $\dfrac{5}{6} - \dfrac{2}{5} \times (\dfrac{1}{2} + \dfrac{1}{6})$ d) $\dfrac{5}{6} - \dfrac{2}{5} \times \dfrac{1}{2} + \dfrac{1}{6}$

Topic 9 | Probability

1. Tommy has a bag with the following marbles containing 5 red, 1, blue, 6 green, 4 yellow and 9 white.
   a) He reaches into the case without looking and pulls out one marble. What is the probability that it will be:
      i) red?
      ii) green or yellow?
      iii) not white?

2. A store is selling jackets that are available in two colors and four sizes as shown in the diagram below. Colleen is will randomly select one jacket from a shelf. The shelf has jackets in equal numbers of colors and sizes.
   a. List all possible color and size options.
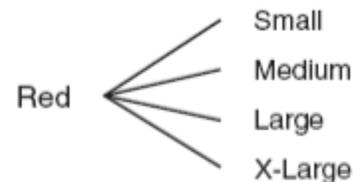
   b. What is probability that Colleen will randomly select a large jacket?
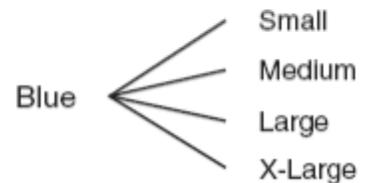
   c. What is the probability that she will randomly select a red jacket that is smaller than x-large?