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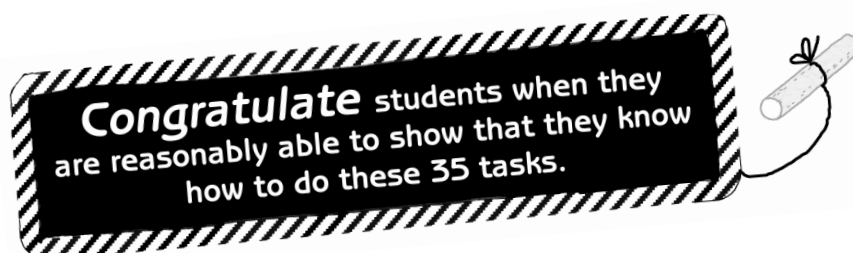
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To the teacher ...

You can use this book in a variety of ways to help your students show that they know what they need to know by the end of the course. Here are some suggestions ...

- Review the course overview thoroughly. (pages 7–13)
- Provide thorough instruction and resources during the course to build students' understanding and let them practise these skills.
- When students are ready to show what they know, get them started on the 35 tasks.
- Provide more instruction when a student cannot complete all five items correctly. Discuss the correct and incorrect answers. Help each student get to the place where they are fluent with the concept and process before having the student try the second version of the task.
- Use the two versions of the end-of-course tasks
 - ... as pretests and post-tests
 - ... as consecutive check-ups (with instruction in between)
 - ... as aids in your instruction
 - ... at the beginning of the course and at the end of the course
 - ... throughout the year
 - ... any time students are ready
 - ... with individuals or the whole group.
- Encourage students to keep their own record of progress on these tasks. (See **Student Record Sheet**, page 84.)
- Keep a class record of student progress on the tasks. (See **Teacher Record Sheet**, page 85.)
- Choose an appropriate time for the cumulative review. (See **Putting It All Together**, pages 86–91.)
A student may take this when they are ready. Or, you might give it to the entire class when you feel the timing is right.
- If a student misses more than five items on the cumulative review, identify the areas of confusion and find a way to reteach that task.



Showing Proof of Mastery

By the end of your General Maths course, you should be able to successfully complete the following 35 tasks. Note that each task is broken into its component skills. Showing that you have each of the skills and can complete the tasks is one way to show proof of mastery.

Task 1	<p style="text-align: center;">Identify numbers, number systems and sets.</p> <p style="text-align: center;"><i>You show that you can do this task when you</i></p> <ul style="list-style-type: none"> • distinguish between whole numbers, decimal numbers, rational numbers, real numbers, integers and irrational numbers • identify sets, subsets and equivalent sets • identify intersections and unions of sets • use set terminology • answer questions about sets represented by Venn diagrams.
Task 2	<p style="text-align: center;">Recognise and use whole number concepts.</p> <p style="text-align: center;"><i>You show that you can do this task when you</i></p> <ul style="list-style-type: none"> • read and write whole numbers (with words and numerals) • identify even, odd, prime and composite numbers • compare and order whole numbers • recognise or find multiples of whole numbers • recognise or find factors of whole numbers • identify place value in whole numbers • round whole numbers.
Task 3	<p style="text-align: center;">Perform operations with whole numbers.</p> <p style="text-align: center;"><i>You show that you can do this task when you</i></p> <ul style="list-style-type: none"> • add or subtract whole numbers • multiply whole numbers • divide whole numbers • identify the operations needed in a problem • recognise missing operations • perform operations with multiples of ten.
Task 4	<p style="text-align: center;">Use properties of numbers and operations.</p> <p style="text-align: center;"><i>You show that you can do this task when you</i></p> <ul style="list-style-type: none"> • recognise and use the Commutative Properties for addition and multiplication • recognise and use the Associative Properties for addition and multiplication • recognise and use the Identity Properties for zero and one • recognise and use the Distributive Property of Multiplication over Addition • recognise and use the Zero Property.



Identify numbers, number systems and sets.



Do you know it? Show it:

1

Which statements are true?

- a. All numbers are whole numbers.
- b. Integers can be positive or negative.
- c. A decimal is a rational number.
- d. Most fractions are not rational numbers.
- e. A repeating decimal is an irrational number.
- f. All irrational numbers are real numbers.

2

Which number does NOT belong in the set of integers?

$13\frac{1}{2}$ -17 0 101 -4 15

3

Set A = $\{-5.5, -\frac{3}{4}, 16, 0, 32, 0.15\}$ Set B = $\{0, -16, -\frac{3}{4}, -32, \frac{3}{4}, 16, 0.5\}$

- a. Is set A equivalent to set B? *yes* *no*
- b. Is $\{16, 0.15, \frac{3}{4}\}$ a subset of set A? *yes* *no*
- c. Is $\{-\frac{3}{4}, 0, 16\}$ the intersection of A and B? *yes* *no*

4

Circle any irrational numbers.

55.363636 $-4\frac{1}{2}$ -0.061 0 $101.012086370 \dots \frac{0}{5}$

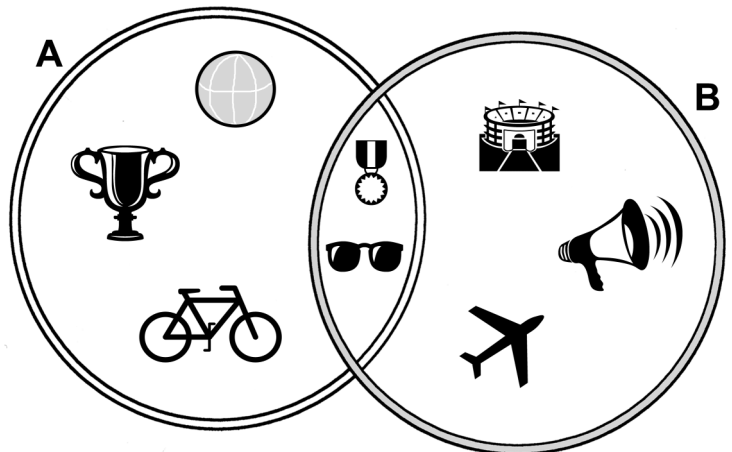
5

Do the following to show that you understand sets:

- a. Draw a member of set A that is NOT a member of set B.

- b. Tell how many items are in the union of sets A and B. _____

- c. Name the items in the intersection of sets A and B.





Recognise and use fractional number concepts.



Do you know it? Show it:

1

Rewrite each group of words as a numeral.

Rewrite each numeral with words.

- a. seventeen-twentieths _____
- b. four one-hundredths _____
- c. ninety and three-fifths _____
- d. $6\frac{2}{3}$ _____
- e. $\frac{8}{9}$ _____
- f. $\frac{13}{10}$ _____

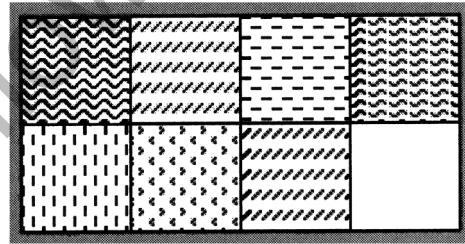
2

Circle the improper fractions. Write each one as a mixed fraction.

- $3\frac{1}{2}$ $\frac{26}{9}$ $\frac{7}{12}$ $\frac{20}{4}$ $\frac{43}{8}$

3

Write a fraction to represent the part of the garden that is planted.



4

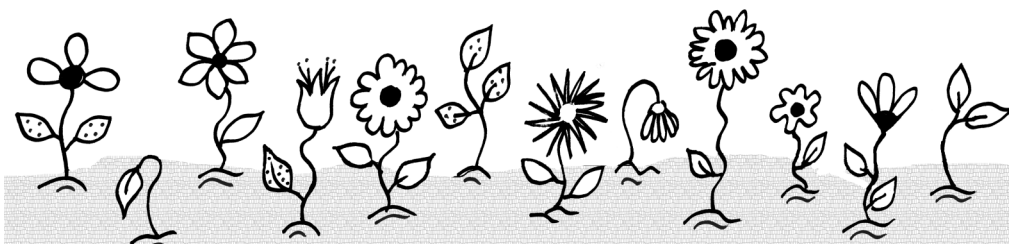
Change each number into an improper fraction.

- a. $25\frac{1}{2}$ b. 73 c. $16\frac{3}{4}$ d. $100\frac{11}{12}$

5

Write a fraction to answer each question.

- a. What fraction of the plants have flowers? _____
- b. What fraction of the leaves have spots? _____
- c. What fraction of the flowers have more than three petals? _____
- d. What fraction of the plants are not wilted? _____



General Maths End-of-Course Tasks

Student Record Sheet

NAME _____

Task		Part a , date and # correct	Part b , date and # correct
1	Identify numbers, number systems and sets.		
2	Recognise and use whole number concepts.		
3	Perform operations with whole numbers.		
4	Use properties of numbers and operations.		
5	Recognise and use fractional number concepts.		
6	Evaluate and compare fractional numbers.		
7	Perform operations with fractional numbers.		
8	Find rates, write ratios and solve proportions.		
9	Evaluate and compare decimal numbers.		
10	Perform operations with decimal numbers.		
11	Relate fractions, decimals and percentages.		
12	Find percentages and base numbers from percentages.		
13	Identify, compare and operate with integers.		
14	Evaluate and use exponential numbers and roots.		
15	Identify characteristics of lines and angles.		
16	Identify characteristics of plane figures.		
17	Identify characteristics of space figures.		
18	Choose, use and convert measurement units.		
19	Find and compare measurements (length, area).		
20	Find and compare measurements (surface area, volume).		
21	Find and compare measurements (weight, time, temp).		
22	Define and use concepts of statistics.		
23	Interpret and use statistical data.		
24	Identify outcomes and find probability.		
25	Find or predict various kinds of outcomes (permutations, combinations, odds, random sampling).		
26	Write, simplify and evaluate expressions.		
27	Write, evaluate and graph inequalities.		
28	Solve one- or two-step equations.		
29	Solve multi-step or complex equations.		
30	Recognise and use algebraic concepts.		
31	Locate and graph points on a coordinate grid.		
32	Use appropriate problem-solving strategies.		
33	Solve a variety of word problems (I).		
34	Solve a variety of word problems (II).		
35	Explain and verify the problem-solving process.		

Putting It all Together, Cumulative Review (pgs 86–91) Date _____ Score _____ of 65

Putting It All Together

For questions 1–20, compare the quantities given in A and B.

Circle A if the quantity represented by A is greater than the quantity represented by B.

Circle B if the quantity represented by B is greater than the quantity represented by A.

Circle E if the quantities are equal.

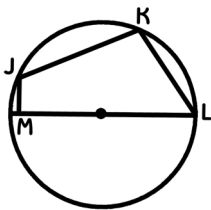
Circle N if there is not enough information for you to decide.

- 1** x and y are integers.

$$3x + 2y = 33$$

- A) x
 B) y
 E
 N

2



- A) area of quadrilateral JKLM
 B) half the area of the circle
 E
 N

- 3** A number has four digits. Each is larger than the digit to the left.

- A) a number with all even digits
 B) a number with all odd digits
 E
 N

- 4** Snowball sculpture #1 has less than $\frac{1}{2}$ the number of snowballs as sculpture #2.

- A) the ratio of #1's snowballs to #2's snowballs
 B) the ratio of #2's snowballs to #1's snowballs
 E
 N

- 5** A cube has a side measuring 5 cm. A sphere has a diameter of 5 cm.

- A) the cube's volume E
 B) the sphere's volume N

- 6** A) $\frac{(15.3)(2.5)}{3}$

- B) 11.5 N

- 7** x is an integer.

- A) $\frac{5}{6}x$ E
 B) $\frac{2}{3}x$ N

- 8** A) $\frac{5}{7} \times \frac{3}{5}$ E

- B) $\frac{5}{7} \div \frac{5}{3}$ N

- 9** A pair of dice is tossed.

- A) number of outcomes totalling an even number E
 B) number of outcomes totalling an odd number N

- 10** A) $\frac{5}{7}$ E

- B) $\frac{4}{5}$ N