Year 7 Term 2 Homework

Student Name: _____	**Grade**: _____
Date: _____	**Score**: _____

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3 Year 7 Term 2 Week 3 Homework

3.1 Fractions

3.1.1 Find a fraction of a quantity

Exercise 3.1.1

1. *Daniel measured a table with his hand and its length was 6 handspans. Then he measures the length of the table in metres and it was $\frac{6}{5}$ m. What is the length of Daniel's handspan in metres?*

2. *George got 5 out of 8 questions correct on his math test. If there were 72 questions on the test, find the number of questions that George answered correctly.*

3. *A carpenter purchased a $2\frac{1}{2}$ m of timber. He used $\frac{2}{5}$ of this to make a chair and $\frac{3}{7}$ of the remainder to make a picture frame. What length of timber remained unused?*

4. *John and Henry are brothers. Between them, John owns $\frac{3}{7}$ of the stamps in their collection and Henry owns the rest. Two months later John has double the number of stamps he had previously while Henry has triple the number that he had. If there are now 540 stamps in the collection, find the number of stamps which each boy owns.*

3.1.2 The unitary method

To find the size of a quantity given a fraction of its value:

1. find the unit fraction value of the quantity ($\frac{1}{x}$)
2. find the entire quantity.

Example 3.1.1 Find the number if:

1. *$\frac{1}{5}$ of the number is 4.*
   Solution: since $\frac{1}{5}$ of the number is 4,
   $\therefore \frac{5}{5}$ of the number will be $4 \times 5 = 20$
2. *$\frac{3}{8}$ of the number is 36.*
   Solution: since $\frac{1}{8}$ of the number is $36 \div 3 = 12$
   $\therefore \ \frac{8}{8}$ of the number will be $8 \times 12 = 96$.

Exercise 3.1.2 Find the number if:

1. *$\frac{7}{12}$ of the number is 28* _____
2. *$\frac{4}{11}$ of the number is 48* _____
3. *$\frac{8}{13}$ of the number is 24* _____
4. *If $\frac{7}{12}$ of a number is 42, find $\frac{5}{12}$ of the number.* _____
5. *If $\frac{2}{9}$ of a number is 18, find $\frac{7}{9}$ of the number.* _____

Exercise 3.1.3

1. *Joe paid \$18 for a book, which represented $\frac{3}{8}$ of the money in his wallet at the time. How much money was in the wallet before the purchase?*

   _____

   _____

2. *Bob lost $\frac{5}{6}$ of his money at the casino. If he lost \$800, find the amount of money which he had originally.*

   _____

   _____

3.1.3 The relative sizes of fractions

Exercise 3.1.4 Arrange the following fractions in ascending order:

1. $\frac{10}{16}, \frac{18}{32}, \frac{3}{4}, \frac{3}{8}, \frac{1}{2},$

2. $\frac{1}{3}, \frac{1}{2}, \frac{11}{24}, \frac{3}{8}, \frac{7}{12},$

3. $\frac{11}{20}, \frac{21}{40}, \frac{6}{8}, \frac{7}{10}, \frac{4}{5},$

4. $\frac{11}{30}, \frac{2}{5}, \frac{1}{3}, \frac{3}{10}, \frac{4}{15},$

Exercise 3.1.5 Which fraction is more closer to 5?

(A) $\frac{37}{7}$, *(B)* $4\frac{4}{7}$, *(C)* $5\frac{3}{7}$, *(D)* $\frac{33}{7}$, *(E)* $\frac{34}{7}$

Exercise 3.1.6 Which fraction is more closer to $2\frac{1}{2}$?

(A) $\frac{16}{7}$, *(B)* $\frac{12}{7}$, *(C)* $\frac{15}{7}$, *(D)* $2\frac{3}{7}$, *(E)* $2\frac{5}{7}$

Exercise 3.1.7 Compare the following fractions:

a. $\frac{4}{9}$_____$\frac{7}{16}$ *b.* $\frac{5}{9}$_____$\frac{7}{16}$ *c.* $\frac{4}{11}$_____$\frac{3}{8}$ *d.* $\frac{6}{11}$_____$\frac{7}{12}$

e. $\frac{3}{5}$_____$\frac{8}{13}$ *f.* $\frac{6}{5}$_____$\frac{14}{13}$ *g.* $\frac{2}{9}$_____$\frac{3}{11}$ *h.* $\frac{4}{13}$_____$\frac{5}{14}$

3.1.4 Expressing one quantity as a fraction of another

Exercise 3.1.8 From 2 kg of fresh apples you can get 300 g of dried apple:

1. *What part of the fresh apples is the dried apple?*

2. *What percentage of the fresh apples is the dried apple?*

3. *What part of the mass of the fresh apples is lost in the drying process?*

4. *What percentage of the mass of fresh apples is lost?*

Exercise 3.1.9 The Ryde Council has laid 12 $\frac{1}{2}$ km of a cycle track, which is $\frac{7}{8}$ of the planned length.

1. *What length will the cycle track be when it is completed?*

2. *Next year the council plans to extend the cycle track by $2\frac{1}{3}$ of the original length. How long will the cycle track be then?*

3.1.5 Problem Solving

Exercise 3.1.10 From 2 kg of fresh ham we can get about 1250 g of smoked ham.

1. *What percentage of mass of the fresh ham is lost by smoking process?*

2. *How much smoked ham can we get from 6 kg of fresh ham?*

3. *How much fresh ham is needed to produce 6 kg of smoked ham?*

Exercise 3.1.11 A group of students decided to walk a distance of 28 km over 5 school days. On the first day they walked $6\frac{2}{5}$ km, on the second day they walked $7\frac{3}{8}$ km and the third day they walked $5\frac{3}{4}$ km. What distance did they have to walk on the last two days?

Exercise 3.1.12 The area of two rectangular gardens are equal. The first garden is 64 m long and 30 m wide. The length of the second garden is $1\frac{1}{5}$ of the length of the first garden.

1. *How wide is the second garden?*

2. *What part of the width of the first garden is the width of the second garden?*

3.2 Maths Challenge

Exercise 3.2.1

1. *I thought of a 3-digit number. Both the number and the square root of the number are one more than a whole ten. What could my number be?*

2. *Adam has 20 CDs more than George. David has 15 fewer CDs than Bob. George and David together have the same number of CDs as Bob. If David has 8 CDs, How many CDs does each person have?*

3. *An equilateral triangle and a regular hexagon have equal perimeters. What is the ratio of their areas?*

4. *If you are allowed to use positive whole numbers and addition, there are just four different ways of writing the number 3, namely ;* $1+1+1$, $1+2$, $2+1$ *and 3 itself. How many ways are there of writing the number 5?*

3.3 Miscellaneous Exercises

Exercise 3.3.1 Calculate the following:

1. $3 \times 5.25 \div (0.7 - \frac{1}{4})$

2. $7.5 \div 3\frac{3}{4} \times (\frac{3}{5} + 2.25)$

3. $1\frac{1}{3} \times 2\frac{1}{2} \div 1\frac{1}{2}$

4. $\frac{4-\frac{3}{5}}{4+\frac{3}{5}}$

5. $(\frac{1}{3} \times 5\frac{1}{4}) - (2\frac{1}{3} \div 3\frac{1}{2})$

6. 0.03×0.45

Exercise 3.3.2

1. *There are 252 marbles in a bag. If $\frac{2}{7}$ of them are red. $\frac{4}{9}$ of the remainder are green and the rest are blue, how many blue marbles are there?*

2. *The product of two fractions is $\frac{5}{8}$. One of the fraction is $2\frac{11}{32}$. Find the other fraction.*

3. *A piece of string was $7\frac{4}{9}$ m long. A boy cut off $1\frac{5}{18}$ m of the string and gave it to his sister. He then cut off $\frac{2}{3}$ of the remaining length for his cousin. What was the length of the remaining piece of string?*

4. *There are 38 red and blue marbles in a bag. $\frac{2}{7}$ of the red marbles is equal to $\frac{1}{6}$ of the blue marbles. Each red marble has a mass of 45 g. Each blue marble has mass of 32 g. Find the total mass of all the marbles in the bag.*

Exercise 3.3.3

1. *Alice had a total of 408 red and yellow ribbons. She used $\frac{3}{5}$ of her red ribbons and bought another 32 yellow ribbons. As a result, the number of yellow ribbons she had was $\frac{1}{4}$ the number of red ribbons. How many more red ribbons than yellow did she have at first?*

2. *There are 1480 apples and pears at a fruit stall. $\frac{1}{2}$ of the apples is equal to $\frac{1}{3}$ of the pears. Find the number of apples.*

3. *There are 468 cows and sheep in a farm. $\frac{3}{5}$ of the sheep is equal to $\frac{3}{7}$ of the cows. Find the difference in the number of cows and sheep on the farm.*

4. *Adam spent \$4.50 on a watermelon. He spent $\frac{2}{11}$ of his remaining money on some apples and pears; after which $\frac{3}{4}$ of his money was left. The amount of money he spent on the apples was twice the amount he spent on the pears. What fraction of his money did he spend on the apples and pears?*