

Year 5 Term 4 Homework

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

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6 Year 5 Term 4 Week 6 Homework

6.1 Topic 1 — Simultaneous Equations

Exercise 6.1.1

1. $2x + y = 5$
 $5x - 3y = 7$

2. $2x - 3y = 3$
 $4x + 3y = 15$

3. $x - y = 8$
 $\frac{x}{2} + \frac{y}{3} = -1$

4. *Eight dollars were changed into 25 coins consisting of just 20-cent coins and 50-cent coins. How many coins of each kind were in the change?*

5. *Daniel has 24 coins being either an one-dollar coin or a two-dollar coin. He has a total of \$38. How many of each coin does he have?*

6.2 Topic 2 — Chance**Exercise 6.2.1**

1. Mike throws two dice. Find the probability that the sum of the numbers face up will be:

(a) greater than 7. _____

(b) 7 or more. _____

(c) even or less than 7. _____

(d) even and less than 7. _____

2. A bag contains 48 coloured marbles. William chooses a marble at random from the bag. He records its colour and returns it to the bag. He does this twelve times. The results are listed below:

Colour	Number drawn
Red	2
Black	4
Yellow	6

From his result in the table above, what is the best estimate of the number of black marbles in the bag?

3. In a raffle, 75 pink tickets and 25 blue tickets were sold. If 8 tickets are drawn at random, what is the most likely number of each colour?

4. One marble is chosen at random from a bag of marbles. Which statement is true if the probability of this marble being blue is $\frac{1}{2}$?

(a) Only one of the marble is blue.

(b) None of the marble is blue.

(c) All of the marbles are blue.

(d) half of the marbles are blue.

6.3 Topic 3 — Time

Exercise 6.3.1

1. *A certain clock gains one minute of time every hour. If the clock shows the correct time now, in how many hours will it next show the correct time again?*

2. *How many times do the hands of a clock coincide for a week?*

3. *At which hours do the hands of a clock form an angle that measures 120° ?*

4. *How many times each day for both hands of a certain clock to be perpendicular to each other?*

5. *How many times each day for both hands of a certain clock lie directly opposite each other?*

6.4 Topic 4 — Tree Diagrams

Example 6.4.1 If Tony is tossing a \$1 coin, each toss can turn up either heads(H) or tails (T).

Solution: *When Tony tosses the coin twice, the possible results are **HH, HT, TH or TT**.*

Exercise 6.4.1

1. If Tony is tosses the coin four times, how many possible outcomes will have?

2. Every morning Richard makes his own sandwich. He can use brown or white bread and can choose between honey, vegemite, tuna or salad filling. How many different sandwiches can Richard make? (Construct a tree diagram to work out the number of variations.)

3. Ray and Jessica are planning to go to China Town. They can travel from home to the city by train, car or bus. From the city they can go to China Town by walking, taking a taxi or monorail. How many ways in which they can travel from home to China Town? (List the various ways)

4. Ken has a white shirt, a tan shirt, a pair of brown pants, a pair of black pants, a pair of blue pants, a plaid sport coat, and a tweed sport coat. How many different three-piece outfits can he make if each outfit consists of one shirt, one pair of pants and one coat?

6.5 Problem Solving (HCF)

Methods of Finding Highest Common Factor (HCF):

1. Listing of Factors:

Example 6.5.1 Find the HCF of numbers 36 and 60.

***Solution:** Factors of 36: 1, 2, 3, 4, 6, 9, 12, 18, 36.
Factors of 60: 1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30, 60.
Common factors: 1, 2, 3, 4, 6, 12.
Therefore **12** is the HCF of these two numbers.*

2. Testing for the HCF of Two or More numbers:

Example 6.5.2 Find the HCF of numbers 36 and 60.

***Solution:** The smaller number of the two numbers is 36 which has following factors: 36, 18, 12, 9, 6, 4, 3, 2, 1. (list them in descending order)
The first factor of 36 that divides 60 exactly is 12.
Therefore **12** is the HCF of these two numbers.*

3. Prime Power Factorisation:

The HCF is the product of the least power of each prime that is present in all of the factorisations.

Example 6.5.3 Find the HCF of numbers 36 and 60.

***Solution:** The prime factors of 36: $2 \times 2 \times 3 \times 3 = 2^2 \times 3^2$
The prime factors of 60: $2 \times 2 \times 3 \times 5 = 2^2 \times 3^1 \times 5^1$
Their least powers are 2^2 and 3^1 which are present in both.
Therefore $HCF(36, 60) = 2^2 \times 3^1 = 12$*

Exercise 6.5.1

1. Find the HCF (60, 90).

2. Find the HCF (56, 84)

3. Find the HCF (36, 60, 90)

4. Find the HCF (16, 24, 36)

5. Find the HCF (54, 144)

6. Find the HCF (38, 95)

6.6 Test Paper 6**6.6.1 Part A**

1. Find the square of 125. _____
2. How many mm in $1\frac{3}{8}$ m? _____
3. Express 4.24 as an improper fraction and reduce the answer to its simplest form. _____
4. Express $\frac{5}{8}$ as a percentage. _____
5. Find the missing number: $4 : \underline{\hspace{2cm}} = 96 : 216$
6. The perimeter of a square tile is 156 cm. Find its area. _____
7. Find the remainder when 7438 is divided by 15. _____
8. How many fifths are there in $4\frac{4}{10}$. _____
9. Express 348 g as a fraction of 2 kg in its simplest form. _____
10. The height of a triangle is 24 cm. Its base is $9\frac{1}{3}$ cm. What is its area? _____
11. $\frac{7}{10}$ of a revolution is equal to _____ degrees.
12. 8 customers spent \$192. If each of them spent the same amount of money, how much did 5 of them spend? _____
13. A water tank 8m by 5 m by 3.2 m is $\frac{3}{5}$ m filled. How much more water can the tank hold?

14. Find the value of $5\frac{1}{3} - 2\frac{2}{5} + \frac{1}{4}$.

15. Find the value of $2\frac{1}{3} \div 1\frac{3}{4} \times \frac{1}{4}$.

6.6.2 Part B

1. Cathy had \$120. She bought a watch for \$45 and a hand bag for \$50. What fraction of the money did she have left?

2. Mike and Tony shared \$96. Mike received \$16 more than Tony. Find the ratio of Mike's share to Tony's share.

3. The average of 8 numbers is 57. If one of them is 64, find the average of the other numbers.

4. How many cubes of side 4 cm can be put in a rectangular tank that measure 24 cm by 12 cm by 8 cm?

5. The ratio of the breadth of a rectangular field to its length is 3 : 8. If its breadth is 16 m shorter than its length, what is the perimeter of the field?

6. A pair of shoes and a neck-tie cost \$134. Find the average cost of 2 pairs of shoes and 2 neck-ties.

6.6.3 Part C

1. A number has a remainder of 2 when it is divided by 5, but it has a remainder of 3 when it is divided by 6. What is the smallest number that satisfies these conditions?

2. When a certain number N is divided by 4, the result is the same as when N is decreased by 6. What is the number N ?

3. A certain natural number is divisible by both 5 and 6. When the number is divisible by 7, the remainder is 2. What is the smallest number that satisfies these conditions?

4. A certain number has a remainder of 1 when it is divided by 3, it has a remainder of 2 when it is divided by 4 and it has a remainder of 4 when it is divided by 5. What is the smallest number that satisfies these conditions?

5. A natural number is a multiple of 11 and is also divisible by both 4 and 6. What is the smallest number that satisfies these conditions?

6.6.4 Part D

1. Thirteen plums have the same mass as two apples and one pear. Four plums and one apple have the same mass as one pear. How many plums have the mass of one pear?

2. If x is divided by y , the result is $\frac{5}{6}$. If y is divided by z , the result is $\frac{7}{8}$. What is the result when x is divided by z ?

3. The sum of the first 20 multiples of 4 is: $4 + 8 + 12 + \dots + 80$.
The sum of the first 20 multiples of 5 is: $5 + 10 + 15 + \dots + 100$.
Find the difference of the two sums.

4. If 168 is added to one-third of a number, the result is triple of the number. What is the number?
