Year 5 Term 4 Homework

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

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8 Year 5 Term 4 Week 8 Homework

8.1 Topic 1 — Time

Exercise 8.1.1

1. *A quarter of 2 hours equals* _____ *minutes.*
2. *How many seconds are there in* $3\frac{3}{4}$ *minutes?* _____
3. *How many seconds are there in* $2\frac{3}{4}$ *hours?* _____
4. *A tap drips every* $1\frac{1}{2}$ *seconds, How many times will it drip in 35 minutes?*

   _____

   _____

5. *A 3 hours test plus 10 minutes reading time starts at 8.45 a.m. What time will it finish?*

   _____

   _____

6. *At an average speed of 65 km/h a car takes 4 hours and 30 minutes to travel a certain distance. How long will it take if the car is travelling at 75 km/h?*

   _____

   _____

7. *How many times does the hour hand of a clock rotate in a week?*

   _____

   _____

8. *How many hours are there in a fortnight?*

   _____

9. *What is the angle between the two hands of a clock at 20:00?*

   _____

   _____

10. *If the sun rises at 5:32 a.m. and sets at 8:05 p.m., how long is the daylight?*

    _____

    _____

8.2 Topic 2 — Tree Diagrams

Exercise 8.2.1

1. *Four Disney Cartoons are to be arranged on a display cabinet. How many different arrangements can be made?*

2. *Six soldiers are to be lined up for a firing squad.*

   (a) *How many different arrangements can be made?*

   (b) *How many ways can they line up if two particular soldiers wish to stand together on the line?*

   (c) *How many different ways can they line up if these two people wish to be on either end?*

3. *Ten girls in a Girls High School wish to form a doubles combination for the school tennis team. How many different pairings can be formed?*

8.3 Topic 3 — Venn Diagram

Exercise 8.3.1

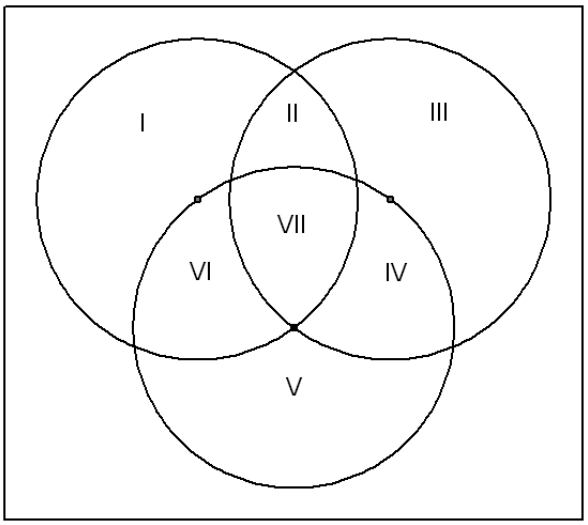
1. *The following information was obtained in a survey of 120 students.*

   - *66 students study English.*
   - *42 students study History.*
   - *38 students study Maths.*
   - *19 students study English and History.*
   - *18 students study English and Maths.*
   - *16 student study History and Maths.*
   - *8 students English, History and Maths.*

   (a) How many students study maths but neither English nor history?

   (b) How many students study English and maths but not history?

   (c) How many student study none of the three subjects?



8.4 Topic 4 — Space (3D)

Exercise 8.4.1

1. *How many faces does a rectangular prism have?* _____

2. *How many edges does a cube have?* _____

3. *How many vertices does a square pyramid have?* _____

4. *Name the following solids:*

   (a) *It has two triangular faces and three flat faces.* _____

   (b) *It does not have any flat face.* _____

   (c) *It has five faces and 5 vertices.* _____

   (d) *It has 6 faces, 6 vertices and 10 edges.* _____

5. *Find the number of faces, vertices and edges of the following solids by using* $E = F + V - 2$*:*

   (a) *Hexagonal Pyramid:*
   Faces: _____ *, Vertices:* _____ *, Edges:* _____ *.*

   (b) *Heptagonal Pyramid:*
   Faces: _____ *, Vertices:* _____ *, Edges:* _____ *.*

   (c) *Octagonal Pyramid:*
   Faces: _____ *, Vertices:* _____ *, Edges:* _____ *.*

   (d) *Decagonal Pyramid:*
   Faces: _____ *, Vertices:* _____ *, Edges:* _____ *.*

6. *What is the total surface area of a cube of side length 5 cm?*

7. *How many 3-cm cubes will fit into a 9-cm cube?*

8.5 Problem Solving (Work Problems)

Example 8.5.1 Method 1: (Unitary Method)

Working alone John can paint a room in three hours and Mike can paint the same room in two hours. At these rates, how long would it take John and Mike to paint the room together?

If John can paint the room in three hours that means he can paint $\frac{1}{3}$ *of the room in one hour.*

If Mike can paint the room in two hours that means he can paint $\frac{1}{2}$ *of the room in one hour.*

If they work together they can paint $\frac{5}{6}$ *of the room in one hour. We can use the ratio method to find the time to paint the entire room.*

1 hour : $\frac{5}{6}$ *room = x hours : 1 room*

$x = 1 \div \frac{5}{6}$

$= 1 \times \frac{6}{5}$

$= 1\frac{1}{5}$ *hours*

(or = 1 hour 12 minutes.)

Example 8.5.2 Method 2:(LCM)

Working alone John can paint a room in three hours and Mike can paint the same room in two hours. At these rates, how long would it take John and Mike to paint the room together?

First find the LCM of the time taken by both for the same job (LCM of 3 and 2 is 6).

If John can paint the room in three hours that means he can paint two of the same size rooms in six hours.

If Mike can paint the same room in two hours that mean he can paint 3 of the same size rooms in six hours.

So if they work together for six hours, they can paint 5 of the same sizes rooms.

Therefore each room will take them $\frac{6}{5}$ *hours to complete.*

(or one hour and twelve minutes)

Exercise 8.5.1

1. *Working alone, a man requires four hours to do a certain job. A child working alone requires eight hours to do the same job. How long will it take the man and the child working together to finish the job?*

2. *An old-model machine can pack 2000 sweets in three hours. A new-model machine can pack 2000 sweets in two hours. How long will it take one old-model machine and one new-model machine to pack 4000 sweets working together?*

3. *Keith needs 6 hours to do a certain job, Tony needs 8 hours to do the same job, and Charles also needs 8 hours to do the job. How long will it take Keith, Tony and Charles working together to do this work?*

4. *It takes $2\frac{1}{10}$ minutes to fill a tub with tap A and tap B both open. Working alone, it will take 3 minutes for the tap A to fill the tub. How long will it take the tap B to fill the same tub?*

8.6 Test Paper 8

8.6.1 Part A

1. $24 \div 6 \times (4-2) =$ _____
2. $24 \times 6 \div (4-2) =$ _____
3. $0.025 \times 12.5 =$ _____
4. $12.5 \div 0.025 =$ _____
5. $3\frac{1}{3} + 1\frac{2}{5} =$ _____
6. $3\frac{1}{3} - 1\frac{2}{5} =$ _____
7. $3\frac{1}{3} \times 1\frac{2}{5} =$ _____
8. $3\frac{1}{3} \div 1\frac{2}{5} =$ _____
9. Express 45% as a fraction. _____
10. Express $\frac{3}{5}$ as a percentage. _____
11. Express 0.025 as a percentage. _____
12. Express $2\frac{1}{4}$ as a percentage. _____
13. Evaluate $3^4 + 4^3 + 5^2 =$ _____
14. Evaluate $\sqrt{(14^2 - 13^2) \div 3} =$ _____
15. Evaluate $\frac{36+(35\times 36)}{18} =$ _____
16. The average of first five consecutive even numbers is _____.
17. The sum of first 20 consecutive odd numbers is _____.
18. What is 125% of \$350? _____
19. What is 0.25% of \$3000? _____
20. If 32% of a certain number is 1800, the number is _____.

8.6.2 Part B

1. The area of a square is 144 cm^2. Find its perimeter in centimetres.

2. The sum of five numbers is 3456. If one of the five numbers are changed from 123 to 321, what is the new sum of these five numbers?

3. Find the difference of the sum of the first ten consecutive odd numbers and the first ten consecutive even numbers.

4. How many times does the digit 3 occur from 10 to 30?

5. The average cost of 4 pens is \$1.20. If one of them costs \$1.50, what is the average cost of the other pens?

6. Find the volume of a rectangular box, 25 cm long 17 cm wide and 15 cm high.

7. 432 students from Chatswood Public School participated in a reading competition organised by the National Library. If there were three times as many girls as boys, how many boys were there?

8.6.3 Part C

1. The average of five boys is 36.8 kg and the total weight of five girls is 172.5 kg. Find the average weight of these 10 children.

2. Linda bought a dress at a discount of 65%. If she paid \$28, How much did the dress actually cost?

3. Ivy spent half of her money on food and $\frac{2}{5}$ of the remaining amount on clothes. If she has \$99 left, how much did she have at first?

4. The ratio of the number of males to the number of females who watched a football match at the National Stadium last night was 12:7. If there were 235 males more than females, how many people were there?

5. James saves 40% of his pocket-money every week. If he spends a total of \$60 in 5 weeks, How much is his pocket-money per week?

8.6.4 Part D

1. A ship travels from A to B in 5 days. If it travels from B to A, it will take 7 days. Suppose the direction and the speed of the current remain constant. How long does it take for a raft floating along the water to go from A to B?

2. Tony uses 3 sheets of paper each day and Mike uses 5 sheets of paper each day. They go to purchase a batch of 20 sheets of paper on the day they discover that there are not enough sheets for the next day. If Tony and Mike go to purchase together on the first day, on which day will they next to go to purchase together?

3. If $2^3 + 4^3 + 6^3 + ... + 30^3$ = 115200, find the value of $1^3 + 2^3 + 3^3 + ... + 15^3$

4. It takes four minutes to fill a tub to the top and five minutes to drain the full tub. If the tap and drain are both open, how long will it take to fill the tub?