Year 4 Term 4 Homework

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

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7 Year 4 Term 4 Week 7 Homework

7.1 Topic 1 — Ratio and rate

Exercise 7.1.1

1. *When Addison returned to the library the book he had borrowed, he read the following notice about fines:" If a book is one day overdue, the fine is 5 cents; for two days it is 10 cents; for three days, 20 cents; for 4 days 40 cents, and so on. If Addison has pay a fine of $6.40, How many days overdue is his book?*

2. *Jane and Bonnie took a holiday job strawberry picking. Jane filled four buckets of strawberries while Bonnie filled three buckets. How many buckets will Jane fill while Bonnie fills 24 buckets?*

3. *At the market. stand A sells 3 kg bags of potatoes for $1.35, while stand B sells 5 kg bags for $2.15.*

   (a) *At stand A, how many kilograms can be bought for $13.50?*

   (b) *At stand B, how many kilograms can be bought for $43?*

   (c) *What is the cheapest way to purchase exactly 24 kg of potatoes if I can buy some potatoes at each stand?*

7.2 Topic 2 — Doing jobs

Exercise 7.2.1

1. *If 6 people can do a job in 4 hours, work out how long it will take:*

   (a) *1 person;*

   (b) *3 people;*

   (c) *12 people;*

2. *If 30 people can do a job in 9 days:*

   (a) *How long would it take if only 10 people were employed?*

   (b) *how many additional people must be employed to complete the job in only 6 days?*

3. *If 20 workers can do half a task in 12 days, calculate the number of days that will be needed for:*

   (a) *20 workers to do it all;*

   (b) *1 worker to do it all;*

   (c) *5 workers to do it all;*

   (d) *5 workers to do half of it.*

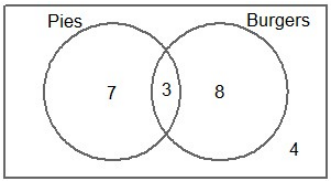
7.3 Topic 3 — Venn diagrams

A Venn diagram is a diagram that used to represent data. The same symbols are used each time.

- A large rectangle is used to represent the whole group.
- A smaller circle is used to represent a sub-group.
- Sometimes two groups have common elements. These are shown by overlapping circles.

Exercise 7.3.1

1. *Which statement is incorrect on relation to this diagram?*



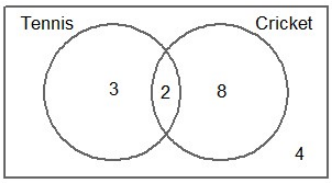
   A *10 children like pies.*

   B *11 children like burgers.*

   C *4 children do not like either pies or burgers.*

   D *25 children were surveyed to prepare this diagram.*

2. *Which statement is correct in relation to this diagram?*



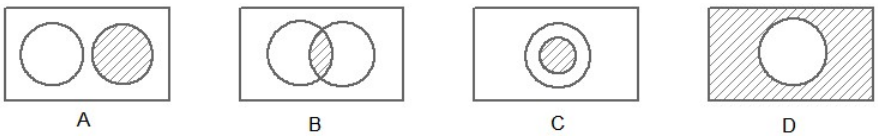
   A *13 children play tennis.*

   B *14 children play both sports.*

   C *4 children do not play either tennis or cricket.*

   D *7 children play tennis.*

3. *Which Venn Diagram fits this dates. Of all of the children in our school, I (the shaded part) am one person in a class in the school.*



7.4 Topic 4 — Conjectures

Goldbach's first conjecture was that 'every even number greater than 4 is the sum of two prime numbers'; for example: $14 = 11 + 3$ or $14 = 7 + 7$.

Exercise 7.4.1 Express the following even numbers as sums of two prime numbers:

1. *16*
2. *24*
3. *72*
4. *92*
5. *98*

Goldbach's second conjecture is that 'every odd number greater than 7 is the sum of three prime numbers; for example: $9 = 2 + 3 + 5$ or $9 = 2 + 2 + 5$ or $9 = 3 + 3 + 3$.

Exercise 7.4.2 Express each of these numbers as the sums of three prime numbers:

1. *13*
2. *23*
3. *33*
4. *53*
5. *83*

7.5 Problem Solving

Exercise 7.5.1

1. *Two brothers, Alex and Joshua, together receive $29 pocket money each week. Work out how much each boy receives if:*

   (a) *Alex has $2 more than Joshua;*

   (b) *Alex has $5 more than Joshua;*

2. *Glasses, with their case, cost $128. If the glasses cost $110 more than the case, how much does the case cost?*

3. *Linda has twice as much money as Carlo. When Linda gave Carlo $12, both had the same amount.*

   (a) *How much did Linda have originally?*

   (b) *How much do they have altogether?*

4. *Ken applies for a job as a mechanic. It is advertised as $27.50 per hour, working from 7:30 am till 3:30 pm for 5 days a week. If Ken successful in getting this job:*

   (a) *How many hours will he be at work each week?*

   (b) *How much will he earn each fortnight?*

7.6 Maths challenge

Exercise 7.6.1

1. *In the five-digit number A6A32, each of the As represents the same digit and A6A32 is divisible by 9. What digit does A represent?*

2. *A car can travel 1 kilometre in 1 minute and 12 seconds. At this rate how many kilometres will it travel in 2 and a half hours?*

3. *A cyclist wants to make a 600 km trip on his two-wheel bicycle. He has a spare wheel which is used to replaced either of the other two wheels. Suppose each of the three wheels is to travel the same distance during the trip. How many kilometres should each wheel travel?*

4. *There are exactly six different three-digit numbers that can be formed using each of the digits 2, 4 and 6. If the digits cannot be repeated, find the average of these six three-digit numbers.*

5. *While Harry brushes his teeth he leaves the tap running which uses 4 L of water every time. He brushes his teeth twice a day. If, instead, he uses two 300 mL cups of water to brush his teeth each time, how much water would he save in a week?*

7.7 Diagnostic Test

1. How many quarters are there in $6\frac{1}{2}$? [5]

1. _____

2. Daniel ordered 2 scoops of ice-cream. He can choose from chocolate, vanilla or strawberry and can order different flavours or 2 flavours the same. How many different combinations can he buy? [5]

2. _____

3. Richard walks 30 m in 20 seconds. If he walks at the same speed, how far will he walk in $\frac{3}{4}$ hour? [5]

3. _____

4. Raymond has one ten-cent coin, one twenty-cent coin, one fifty-cent coin and one-dollar coin. How many different amounts of money can he make? [5]

4. _____

5. Emma had three times as much money as Alice. When Emma gave $12 to Alice, they both have the same amount. How much did Emma have originally? [5]

5. _____

6. How many three digit numbers can be formed by using digits 2, 4, 6 and 8 if the digits can be repeated? [5]

6. _____

7. How many three digit numbers can be formed by using digits 2, 4, 6 and 8 if the digits cannot be repeated? [5]

7. _____

8. How many whole numbers from 10 to 100 inclusive are not divisible by 5? [5]

8. _____

9. If it takes 6 men 12 days to do a piece of work, how long would it take 9 men working at the same rate? [5]

9. _____

10. George has more than 30 marbles but fewer than 50. When the marbles are counted by threes, there is one left over. When they are counted by fives, there are two left over. How many marbles does George have? [5]

10. _____

11. The difference between half the mass of the brick and the whole brick is 550 grams. What is the mass of the brick? [5]

11. _____

12. Tony has a trundle wheel that clicks every 2 metres. How many clicks will be heard in one and a half kilometres? [5]

12. _____

13. Express the number 92 as sums of two prime numbers. (any one of the possible answers) [5]

13. _____

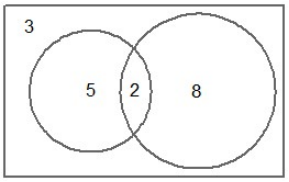
14. Express the number 47 as the sums of three prime numbers. (any one of the possible answers) [5]

14. _____

15. Five consecutive odd numbers add up to 145. What is the largest number? [5]

15. _____

16. 3 people don't eat fruit. 5 like only apples. 8 like only oranges and 2 people like both apples and oranges. How many people were asked to give their opinion? [5]



16. _____

17. The 4th of February in 2008 was Monday. What is the date of the last Tuesday on February 2008? [5]

17. _____

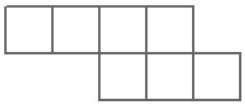
18. The sum of two numbers is 1086. If 105 is added to one of these numbers, what is the new total? [5]

18. _____

19. A rectangle is made up of 4 small squares side by side. If the perimeter of one of these small squares is 12 cm, what is perimeter of the rectangle? [5]

19. _____

20. How many different sizes of rectangles does this figure have? [5]



20. _____