

Year 6 Term 1 Week 6 Homework

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

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Marks:	10	10	10	9	9	12	15	15	10	100
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6 Year 6 Term 1 Week 6 Homework

6.1 Topic 1 — Ratio and Rate

1. A car travels at 75 km/h, 15 km/h faster than a van. If the van takes 3 hours to complete a journey, how long will it take the car to travel the same distance?

2. A car started from town A and travelled towards Town B at an average speed of 80 km/h. At the same time a bus started from Town B towards Town A at an average speed of 50 km/h. The distance between Town A and Town B is 650 km. How far had the bus travelled when they met?

3. The ratio of pear trees to apple trees in an orchard is 7 to 12. If there are 35 more apple trees than pear trees, how many pear trees are there?

4. The area of a square and a rectangle are the same. The rectangle measures 27 cm by 3 cm. What is the perimeter of the square?

6.2 Topic 2 — Fractions

1. Find the value of $36 - 7 \times \left(\frac{3}{14} + \frac{3}{7}\right) + 2 \div \frac{1}{4}$. _____
2. How many $\frac{1}{6}$'s are there in $\frac{2}{3}$? _____
3. If $6\frac{2}{3} = 5\frac{\boxed{?}}{3}$, what is the missing number in the box? _____
4. If $a = 4$, $b = 6$ and $c = 8$, find the value of $4a + \frac{b}{3} - \frac{3}{c}$. _____
5. Find the value of $6 + \frac{4}{100} + \frac{2}{1000}$. _____
6. If $3\star + 4 = 31$, then $\frac{4\star}{7} =$ _____
7. $1 + \frac{4}{100} + \frac{3}{100} + \frac{7}{100} =$ _____
8. $1 + 4 + \frac{3}{10} + \frac{7}{100} =$ _____
9. $1 + \frac{4}{10} + \frac{3}{100} + \frac{7}{1000} =$ _____
10. $1 + \frac{4}{10} + \frac{3}{10} + \frac{7}{10} =$ _____
11. Here is a number sentence. $\frac{\boxed{?}}{10}$ is greater than $\frac{2}{\boxed{?}}$. What is the smallest number that could go in both boxes to make the number sentence true?

12. When Martin was 14 years old he had a fine stamp collection. After 14 years he had increased his collection by 30%.
 - (a) If he had 2500 stamps when he was 14, how many stamps did he have when he was 28 years old?

 - (b) How many times bigger is his collection now compared to when he was 14?

6.3 Topic 3 — Decimals

1. $5.169 \div 3 = 1 + \boxed{?} + 0.023$. Find the missing number. _____
2. $\frac{3}{8}$ expressed as a decimal is _____
3. Express 0.125 as a fraction in its simplest form. _____
4. Express 0.0125 as a fraction in its simplest form. _____
5. Express 0.08 as a fraction in its simplest form. _____
6. Express $2\frac{5}{7}$ as a decimal, correct to 2 decimal places. _____
7. $\frac{3}{4}$ of 0.8 is equal to _____
8. Express $1\frac{4}{5}$ as a decimal. _____
9. Find the difference between 0.032 and $\frac{3}{5}$. Give your answer to 2 decimal places. _____
10. Find the sum of $2\frac{2}{3}$, 1.75 and 1.25. Give your answer as a fraction. _____
11. Simply $\frac{1}{5} + 0.15 =$ _____
12. Find the value of $\frac{3}{4}$ of 0.6. Give your answer as a fraction. _____
13. Evaluate $3.6 \times 5 + 12.6 \times 6 =$ _____
14. Find the average of 32.5, 12.8, 7.9, 19.1 and 21.7. _____
15. Complete the number pattern: 189.06, _____, 140.66, 116.46.
16. $14 + 0.009 + 15\% =$ _____
17. 0.068 L expressed in cubic centimetres is _____
18. 4.15 hours is equivalent to _____ minutes.
19. The value of 7 in the number 1234.567 is _____
20. Express 84 mL as a decimal of 4 L _____

6.4 Topic 4 — Percentage

1. Linda brought \$150 with her to go shopping. She bought one pack of DVDs for \$52 and two USB keys at \$19 each. What percentage of her money had she spent?

2. Interest of \$1000 was charged on a loan of \$7500 for one year.

(a) What fraction is the interest of the loan?

(b) What percentage is the interest of the loan?

3. Mike had \$80. He spent \$25 in one shop and $\frac{3}{5}$ of the remainder in another shop. What percentage of his money had he left?

4. David bought 4 light bulbs at \$1.50 each and had \$44 left. What percentage of his money did he spend?

5. The enrolment in an association increased from 400 to 700 members. What was the percentage increase in the enrolment?

6.5 Problem Solving — (Ratio and Proportion)

1. The ratio 25 : 10 written in its simplest form is _____ .
2. A fishing rod is 2 m long and an umbrella is 80 cm long. The ratio of the length of the fishing rod to the length of the umbrella is _____ .
3. The perimeter of a rectangular field is 28 m. Its width is one-seventh of the perimeter. The ratio of the length to the width of the field is _____ .
4. In a class of 40, $\frac{3}{5}$ pupils are boys. If $\frac{1}{3}$ boys wear spectacles, the ratio of the number of boys wearing spectacles to the number of pupils is _____ .
5. A sum of money is shared between Alice and Bonnie in the ratio 5 : 3. If Alice gives Bonnie \$18, both girls will have the same amount of money. How much does Alice have at the beginning?

6. An architect made a smaller and a larger model of a house. In the smaller model, the sitting-room is 10 cm long and 4 cm wide. In the larger model, the sitting-room is 25 cm long.

(a) What is the width of the sitting-room in the larger model?

(b) What is the area of the floor in larger sitting room?

7. A total of 240 marbles was shared among Adam, Bob and Charles in the ratio 2 : 3 : 5.

(a) What fraction of the marbles went to Adam?

(b) How many marbles must Charles give Adam and Bob so that they all have equal shares?

6.6 Test Paper 6**6.6.1 Part A — 10 Multiple Choice Questions (1 mark each)**

1. Which one of the following is not equal to $\frac{2}{5}$? [1]
(a) $2 - \frac{3}{5}$ (b) $\frac{4}{10}$ (c) $2 \times \frac{1}{5}$ (d) $2 \div 5$
2. $\frac{2}{5}$ of 1.5 m is equal to _____ [1]
(a) 6 cm (b) 60 cm (c) 600 cm (d) 625 cm
3. Find the value of $1440 \div 18 =$ _____ . [1]
(a) 78 (b) 79 (c) 80 (d) 81
4. Write $\frac{5}{6}, \frac{1}{2}, \frac{3}{4}, \frac{7}{8}$ in descending order. [1]
(a) $\frac{5}{6}, \frac{3}{4}, \frac{1}{2}, \frac{7}{8}$ (b) $\frac{5}{6}, \frac{7}{8}, \frac{3}{4}, \frac{1}{2}$ (c) $\frac{1}{2}, \frac{3}{4}, \frac{5}{6}, \frac{7}{8}$ (d) $\frac{7}{8}, \frac{5}{6}, \frac{3}{4}, \frac{1}{2}$
5. In 2,765,143, the digit 2 stands for _____ [1]
(a) 2 thousands (b) 20 thousands (c) 200 thousands (d) 2 millions
6. Which one of the following is **NOT** equal to 350,906? [1]
(a) $300000 + 50000 + 900 + 6$ (b) Three hundred and fifty thousand, nine hundred and 6.
(c) $340000 + 10006 + 900$ (d) $3 \times 100000 + 5 \times 1000 + 9 \times 100 + 6 \times 1$
7. Find the value of $6 + 9 \div 3 - (12 - 13)$. [1]
(a) 8 (b) 10 (c) 15 (d) 7.5
8. Which one of the following is wrong? [1]
(a) $\frac{3}{4} = 0.75$ (b) $\frac{5}{3} = 1\frac{2}{3}$ (c) $\frac{3}{5} = 0.6$ (d) $2\frac{1}{4} = \frac{10}{4}$
9. Which one of the following is the best estimate of 67.2×4.7 [1]
(a) 67×4 (b) 67×5 (c) 68×4 (d) 68×5
10. Round off 12.345 to 2 decimal places. [1]
(a) 12 (b) 12.6 (c) 12.34 (d) 12.35

6.6.2 Part B — 10 Average Questions (2 marks each)

11. Three single squares are placed side by side to form a single rectangle whose perimeter is 56 cm. [2]
What is the area of each square?

12. Two triangles of base 8 cm and height 10 cm are put together to form a rectangle. What is the area [2]
of the rectangle?

13. A rectangular container of length 50 cm and width 40 cm contains 10 litres of water. Find the height [2]
of the water level.

14. How many 2L bottles of water are required to fill a rectangular tank 60 cm by 50 cm by 20 cm which [2]
already contains 18 L of water?

15. A rectangular tank 50 cm long and 40 cm wide contains 20 litres of water. When a piece of brass is [2]
placed in the water, the height of the water level becomes 13 cm. Find the volume of the brass piece
in cm^3 .

16. Three 5-ml spoonfuls of cough mixture are to be given to each patient. If there are 90 patients, how many litres of cough mixture are required? [2]

17. A piece of meat weighing $4\frac{1}{6}$ kg is cut into three pieces. One piece weighs $1\frac{5}{8}$ kg and another piece weighs $1\frac{1}{4}$ kg. Find the weight of the last piece of meat. [2]

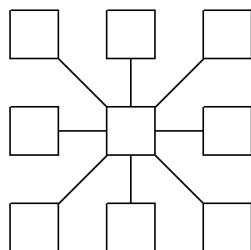
18. A yellow rod is 1.4 m long. A blue rod is 1.1 m longer than the yellow rod. A green rod is 3 times as long as the blue rod. Find the total length of the three rods in metres. [2]

19. A math competition was entered by 80 boys and 70 girls. Prizes were awarded to six boys and 20% of the girls. What percentage of the competitors have been awarded? [2]

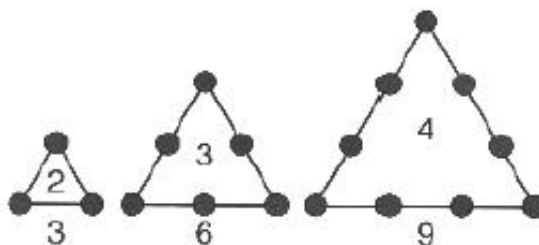
20. Gary sells an article to Daniel at a profit of 25%. Daniel sells the same article to Dolly at a profit of 25%. If Dolly pays \$112.50 for the article, for what price did Gary buy it for? [2]

6.6.3 Part C — 10 Extension Questions (3 marks each)

21. John has numbered cards from 0 to 9. He wants to put one card in each space in the diagram. Each line of 3 cards must add together to make the same total. What is the highest total he can make? [3]



22. Shown below is the start of a pattern. The number below each triangle gives the total number of dots on the triangle. The number inside the triangle gives the number of dots on each side of the triangle. When the total number of dots on a triangle in this pattern is 72, how many dots are there on each of its sides? [3]

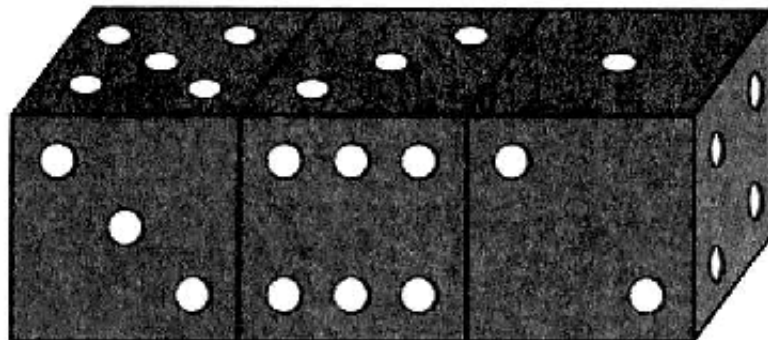


23. Two cubes are glued together to make a rectangular prism. The sum of the lengths of the edges of the rectangular prism is 48 cm. Find the volume of the rectangular prism in cm^3 . [3]

24. Joe cycles at an average speed of 30 km/h and Adam drives at an average speed of 68km/h on the same road and in the same direction. If Joe is 95 km ahead of Adam. How many hours will it take Adam to catch up to Joe? [3]

25. Charles takes $4\frac{1}{2}$ hours to dig a trench. Ken takes 6 hours to dig an identical trench. Working at these rates, how many hours would it take Charles and Ken together to dig another identical trench? [3]

26. The number of dots on the opposite sides of a dice always add up to 7. Three dice are put together. What is the total number of dots that cannot be seen in this diagram? [3]



27. There are four two-digit numbers that can be made with the digit 1 and 2, such as 11, 12, 21, 22. [3]
How many three-digit numbers can be made with the digits 1, 2 and 3?

28. Palindromic numbers are the same when read either forwards or backwards. Alice wrote a 5-digit [3]
palindromic number. Its first and last digits add up to 8. The rest of its digits add up to 7. How many
different numbers could Alice have written?

29. A dressmaker bought 18 m of cloth for \$200 less with 20% discount. She made three identical [3]
dresses. How much was the cost of each dress, correct to the nearest \$1?

30. The perimeter of a rectangular board is 122 cm. Find the area of the board if its length is 18 cm [3]
longer than its breadth.

6.6.4 Part D — 8 Challenging Questions (5 marks each)

31. The cost of 1 kg of pork is 70% the cost of 1 kg of chicken. 1 kg of chicken costs \$1.80 more than 1 kg of pork.

(a) Find the cost of 2 kg of pork.

[2]

(b) Find the total cost of 9 kg of chicken and 6 kg of pork.

[3]

32. A rectangular tank measures 90 cm long by 70 cm wide contains some water and 5 blocks of brick each has a volume of 720 cm^3 . The height of the water level is 30 cm. If the water is drained out at the rate of 6L/min, how long would it take to empty the water in the tank? [5]

33. A rectangular tank was filled with 4500 mL of water to a level of 8 cm. Fifteen similar marbles were put into the tank and the water level rose by 2 cm. Find the volume of each marble. [5]

34. One bag of potatoes and one bag of onions weigh 22 kg. If two bags of potatoes and four bags of onions weigh 60 kg. What is the total weight of eight bags of onions? [5]

35. The ratio of the number of marbles in Box A to the number of marbles in the Box B is 6 : 7. If you take away 10 marbles from Box B and put them into Box A, the two boxes will have the same number of marbles. How many marbles are there in each box? [5]

36. The perimeter of a rectangular floor 7 m long is 25 m, a piece of carpet is placed on the floor, leaving a border 1.5 m wide around it. Find the cost of the carpet at \$38.20 per m^2 . [5]

37. The volume of 10 pieces of plywood of the same size is $384,000 \text{ cm}^3$. Each is 80 cm long and 60 cm wide. If 6 of them are piled one on top of another, what is their total height? [5]

38. The figure shown below is divided into 12 congruent squares. The area of the figure is 108 square units. What is the perimeter of the figure in units? [5]

