

1 Year 5 Term 2 Week 1 Homework

1.1 Topic 1 — Order of operations

1. Find the basic number for each of the following:

(a) $(18 + 42) \div 12 \times 6 =$ _____

(b) $(24 \div 6 + 28 \div 7) \times 3 =$ _____

(c) $[15 + (15 \times 15)] \div 15 =$ _____

(d) $66 \div (19 - 8) \times 12 =$ _____

(e) $25 + 8 \times (12 - 5 \times 2) =$ _____

2. Insert the grouping symbols to make the following true sentences:

(a) $48 - 14 \times 2 = 68$

(b) $64 \div 18 - 2 + 7 = 11$

(c) $16 + 10 \div 8 - 6 = 13$

(d) $72 \div 12 - 3 + 12 = 20$

(e) $144 \div 12 - 6 \times 6 = 36$

3. Use the rule for the order of operations to simplify the following:

(a) $10 \times (9 - 3) \div (12 - 9) + 15 =$ _____

(b) $84 - 8 \times (12 - 3) =$ _____

(c) $5 \times (15 + 3) \div 3 + 12 =$ _____

(d) $84 \div (3 + 9) \times 5 =$ _____

(e) $28 - 125 \div 5 + 12 \div 4 =$ _____

4. Only one of the following equals 21. Which is it?

(a) $3 + 2 \times 4 + 5$

(b) $3 + 2 \times (4 + 5)$

(c) $(3 + 2) \times (4 + 5)$

(d) $(3 + 2) \times 4 + 5$

1.2 Topic 2 — Fractions

1. Simplifying the following fractions:

(a) $\frac{1}{4} \times 116 =$ _____

(b) $1\frac{2}{9} \times \frac{6}{15} =$ _____

(c) $\frac{2}{5} \div \frac{2}{15} =$ _____

(d) $\frac{4}{5} \times \frac{2}{3} \div \frac{2}{5} =$ _____

2. Comparing the following fractions:

(a) $\frac{3}{4}$ _____ $\frac{5}{6}$

(b) $\frac{6}{7}$ _____ $\frac{7}{15}$

(c) $\frac{7}{2}$ _____ $\frac{18}{5}$

(d) $\frac{5}{9}$ _____ $\frac{3}{5}$

3. Adding and subtracting following fractions:

(a) $2\frac{2}{3} + 1\frac{3}{5} =$ _____

(b) $3\frac{2}{7} - 1\frac{4}{5} =$ _____

(c) $\frac{12}{15} + 2\frac{2}{7} =$ _____

(d) $\frac{2}{3} + \frac{3}{4} + \frac{4}{9} =$ _____

4. Problem Solving:

(a) Find the average of $\frac{1}{12}$ and $\frac{2}{3}$.

(b) Find the square root of $12\frac{1}{4}$.

(c) How many times can $\frac{1}{4}$ be subtracted from 8?

(d) Find two fractions whose sum is 1 and whose difference is $\frac{1}{4}$

(e) If you multiply a fraction by 25 and add 9, the answer is 19. What is the fraction?

1.3 Topic 3 — Decimals

1. Adding and subtracting Decimals:

(a) $35.62 + 125.8 =$ _____

(b) $252.8 - 11.36 =$ _____

(c) $7.282 + 26.32 =$ _____

(d) $3456 - 12.58 =$ _____

2. Multiplication of decimals:

(a) $12.4 \times 5.2 =$ _____

(b) $0.325 \times 0.8 =$ _____

(c) $120 \times 0.45 =$ _____

(d) $0.02 \times 0.008 =$ _____

3. Multiplication of decimals by a multiple of 10: (Multiply the digit first and move the decimal point to the right the same number of places as the number of zeros after the whole number.)

(a) $12.58 \times 10 =$ _____

(b) $0.125 \times 40 =$ _____

(c) $1.25 \times 200 =$ _____

(d) $12.5 \times 5000 =$ _____

4. Division of decimals:

(a) $9.345 \div 5 =$ _____

(b) $8.564 \div 4 =$ _____

(c) $1.623 \div 3 =$ _____

(d) $0.549 \div 0.3 =$ _____

5. Division of decimals by a multiple of 10: (Divide it by the digit first and move the decimal point to the left the same number of places as the number of zeros after the whole number.)

(a) $8.4 \div 10 =$ _____

(b) $2.44 \div 20 =$ _____

(c) $6597 \div 900 =$ _____

(d) $2468 \div 4000 =$ _____

1.4 Topic 4 — Percentages

1. Change percentages to fractions:

(a) $23\% =$ _____

(b) $1.8\% =$ _____

(c) $128\% =$ _____

(d) $12.5\% =$ _____

2. Change percentages to decimals:

(a) $92.5\% =$ _____

(b) $1.25\% =$ _____

(c) $0.45\% =$ _____

(d) $112\% =$ _____

3. Change fractions to percentages:

(a) $1\frac{1}{5} =$ _____

(b) $\frac{7}{40} =$ _____

(c) $2\frac{3}{4} =$ _____

(d) $\frac{3}{50} =$ _____

4. Change decimals to percentages:

(a) $0.128 =$ _____

(b) $0.0128 =$ _____

(c) $1.28 =$ _____

(d) $0.28 =$ _____

5. Finding the percentage of a quantity:

(a) How much is a discount of 12.5% on $\$280$? _____

(b) How much is a commission of 8% on $\$125,000$? _____

(c) Albert earns $\$820$ a week. Calculate his new weekly wage if he receives a rise of 4% .

(d) Decrease $\$500$ by 15% . _____

1.5 Problem Solving (Divisibility Test)

1.5.1 Divisibility by 3 and 9

Exercise 1.5.1 A number is divisible by 3 if the sum of its digits is divisible by 3.

1. Find the missing digit so that the resulting number is divisible by 3.

(a) $234 \underline{\quad} 56$

(b) $65 \underline{\quad} 432$

(c) $594 \underline{\quad}$

2. Find the missing digit so that the resulting number is divisible by 9.

(a) $135 \underline{\quad} 7$

(b) $75 \underline{\quad} 31$

(c) $\underline{\quad} 3492$

3. Find all possible values of the missing digits in $\underline{\quad} 5 \underline{\quad}$ so that the resulting number is both divisible by 9.

1.5.2 Divisibility Principle for Sums and Difference

For whole numbers **a**, **b**, and **c**, if **a** and **b** are each divisible by **c**, then the sum and the difference of **a** and **b** are each divisible by **c**.

Example 1.5.1 Determine if $210 - 49$ is divisible by 7

Because both 210 and 49 are divisible by 7; Therefore $210 + 49$ or $210 - 49$ are each divisible by 7.

Exercise 1.5.2 Use the divisibility principle for sums and differences to determine if each of the following numbers is divisible by 11.

1. $8877 \underline{\hspace{10em}}$

2. $7784 \underline{\hspace{10em}}$

3. $6589 \underline{\hspace{10em}}$

1.6 Test Paper 1

1.6.1 Part A — 10 Multiple Choice Questions (1 mark each)

- Which two numbers could be inserted between 0.24 and 0.26 so that four numbers are in ascending order?
(A) 25% and $\frac{3}{8}$ (B) 25% and 0.27 (C) $\frac{1}{4}$ and 0.245 (D) $\frac{1}{4}$ and 0.255
- Change an exam mark of 56 out of 80 to a percentage.
(A) 60% (B) 70% (C) 75% (D) None of these
- Find the lowest common multiple of 6, 8 and 24.
(A) 36 (B) 12 (C) 24 (D) 48
- What percentage of the numbers less than 25 are prime?
(A) 40% (B) 30% (C) 36% (D) 45%
- I am thinking of a 3 digit perfect square number. Its right hand digit is 7 more than its left hand digit. The digit sum of this number must be:
(A) 9 (B) 4 (C) 3 (D) 1
- Alice Saved \$64 per month for the first 4 months of the year and \$52 for each of the remaining months. What was her average monthly savings?
(A) \$62.5 (B) \$62 (C) \$56 (D) \$64
- Change 25m/s to km/h.
(A) 25 (B) 60 (C) 90 (D) 100
- How many numbers are there between 1 and 100 inclusive which are divisible by 5 and leave a remainder of 2 when you divide them by 3?
(A) 6 (B) 7 (C) 8 (D) 9
- A real estate agent charges 7.5% for looking after an investment property. During a year, the property earned \$ 9600 for its owners. How much of this did the real estate agent receive?
(A) \$750 (B) \$730 (C) \$720 (D) \$702
- Eight of us could do a piece of work in 9 days. Working at the same rate, how many day would 6 people take?
(A) 11 days (B) 12 days (C) 13 days (D) 15 days

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

1. How many four digit numbers can be formed using the digits 2, 3, 4, and 5 if no repetitions are allowed?

2. How many numbers, between 1 and 55 inclusive leave a remainder of 4 when divided by 5?

3. Emma starts counting at 10 and goes up by 2 each time. How many numbers will she have counted if she stops counting after counting 128?

4. The number 391,391 is divided by 13. The answer is divided by 11 and this answer is divided by 7. The final answer would be:

5. In a class of 32 students, 8 play tennis. What percentage of students do not play tennis?

6. To make a drink Keith mixed 5 parts of water and 1 part of cordial. How much drink does he make from 3 litres of cordial?

7. What is the total cost of tiling a floor 9 metres by 6 metres at \$25 per square metres?

8. Find the average of 0.04, 0.44, 4.44 and 44.4.

9. Two fifths of a number is 48. Find the number.

10. Find the value of $\frac{3}{4} \times (3.25 + 6.45)$ in decimal.

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

1. On a restaurant menu there are 8 entrees, 5 main courses and 4 desserts. There is also a choice of tea or coffee. How many different meals could you order if a choice was made from each section?

2. In a set of eight numbers, the average of the first five is 18 and the average of the last three is 10. Find the average of all the eight numbers.

3. Alex answered all 25 questions in his exam. He scored 5 marks for every correct answer, but lost 1 mark for every incorrect answer. If his score was 89, how many incorrect answers did he have?

4. The sum of a denominator and a numerator is 98 and their difference is 14. What is the proper fraction in its simplest form?

5. The day is 1 hour 24 minutes longer than the night. How long is the day?

6. Jessica is 18 and her father is 40. How long ago was her father's age 3 times more than Jessica's?

7. Find the sum of: $\frac{1}{2} + \frac{1}{3} + \frac{2}{3} + \frac{1}{4} + \frac{2}{4} + \frac{3}{4} + \dots + \frac{5}{6}$

8. What number is the most likely to complete the pattern?

$$\frac{1}{2}, 1, \frac{11}{18}, \frac{16}{54}, \boxed{?}, \frac{26}{486}$$

9. Find the missing number in the box. $2\frac{2}{5} - \frac{3}{4} \times \boxed{?} = \frac{13}{20}$

10. Find the missing number in the box. $43.68 \div (3.2 + \boxed{?}) = 7.8$

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

1. Find all possible values of the missing digits in ____ 5 ____ so that the resulting three-digit number is divisible by 3.

2. Find the greatest number that divides 147, 219 and 417 with the same remainder in each case.

3. If **a** is divided by **b**, the result is $\frac{4}{5}$. If **b** is divided by **c**, the result is $\frac{5}{6}$. What is the result when **a** is divided by **c**?

4. What number must be placed in the box to make the number sentence true?

$$\frac{\boxed{?} + \frac{1}{3}}{\boxed{?} - \frac{1}{3}} = \frac{2 \times 4 + 2}{2}$$

5. A twelve-hour clock loses 2 minutes every hour. Suppose it shows the correct time in 12 a.m. How many minutes after 12 a.m will it show the correct time again?

6. A certain natural number is divisible by 3 and also by 5. When the number is divided by 7, the remainder is 4. What is the smallest number that satisfies these conditions?

7. The average of seven consecutive numbers is 15. What is the sum of the smallest number and the greatest number?

8. To buy a gift, \$1.80 was collected from each person but they were \$28 short. When \$3.00 was collected from each person, they had \$20 extra. How much were they planning to collect?
