

## Year 7 Term 2 Homework

<b>Student Name:</b> _____	<b>Grade:</b> _____
<b>Date:</b> _____	<b>Score:</b> _____

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## 2 Year 7 Term 2 Week 2 Homework

### 2.1 Fractions

#### 2.1.1 Proper Fractions, Improper Fractions and Mixed Numerals

##### Exercise 2.1.1

1.  $\frac{2}{3} + \frac{4}{7} =$  \_\_\_\_\_

2.  $\frac{2}{3} - \frac{4}{7} =$  \_\_\_\_\_

3.  $\frac{2}{3} \times \frac{4}{7} =$  \_\_\_\_\_

4.  $\frac{2}{3} \div \frac{4}{7} =$  \_\_\_\_\_

##### Exercise 2.1.2

1.  $\frac{3}{2} + \frac{4}{3} =$  \_\_\_\_\_

2.  $\frac{3}{2} - \frac{4}{3} =$  \_\_\_\_\_

3.  $3 - \frac{4}{3} =$  \_\_\_\_\_

4.  $\frac{3}{2} \times \frac{4}{3} =$  \_\_\_\_\_

5.  $\frac{3}{2} \div \frac{4}{3} =$  \_\_\_\_\_

##### Exercise 2.1.3

1.  $2\frac{3}{4} + \frac{4}{5} =$  \_\_\_\_\_

2.  $2\frac{3}{4} - \frac{4}{5} =$  \_\_\_\_\_

3.  $2\frac{3}{4} \times \frac{4}{5} =$  \_\_\_\_\_

4.  $2\frac{3}{4} \div \frac{4}{5} =$  \_\_\_\_\_

5.  $2\frac{2}{3} \times 6 =$  \_\_\_\_\_

6.  $2\frac{2}{3} \div 6 =$  \_\_\_\_\_

7.  $4 \times 3\frac{1}{5} =$  \_\_\_\_\_

8.  $4 \div 3\frac{1}{5} =$  \_\_\_\_\_

**2.1.2 Equivalent Fractions****Exercise 2.1.4**

1.  $\frac{2}{3} = \frac{\quad}{12} = \frac{12}{\quad} = \frac{\quad}{24}$

2.  $\frac{2}{6} = \frac{6}{\quad} = \frac{10}{\quad} = \frac{\quad}{36}$

3.  $\frac{3}{7} = \frac{9}{\quad} = \frac{\quad}{28} = \frac{18}{\quad}$

4.  $\frac{9}{14} = \frac{81}{\quad} = \frac{45}{\quad} = \frac{90}{\quad}$

5.  $\frac{6}{12} = \frac{36}{\quad} = \frac{48}{\quad} = \frac{12}{\quad}$

6.  $\frac{6}{14} = \frac{24}{\quad} = \frac{\quad}{70} = \frac{36}{\quad}$

7.  $1\frac{2}{3} = \frac{\quad}{12} = \frac{15}{\quad} = \frac{\quad}{18}$

8.  $2\frac{2}{5} = \frac{24}{\quad} = \frac{\quad}{20} = \frac{36}{\quad}$

**2.1.3 Simplifying Fractions****Exercise 2.1.5**

1.  $\frac{245}{84} =$  \_\_\_\_\_

2.  $\frac{100}{80} =$  \_\_\_\_\_

3.  $\frac{144}{56} =$  \_\_\_\_\_

4.  $\frac{160}{60} =$  \_\_\_\_\_

5.  $\frac{220}{120} =$  \_\_\_\_\_

6.  $\frac{39}{48} =$  \_\_\_\_\_

7.  $\frac{70}{91} =$  \_\_\_\_\_

8.  $\frac{40}{24} =$  \_\_\_\_\_

**2.1.4 Find a Fraction of a Quantity**

To find a fraction of a quantity:

- convert the quantity to a smaller unit if necessary
- multiply the fraction by the quantity.

**Exercise 2.1.6 Find each of the following:**

1.  $\frac{9}{20}$  of \$6 = \_\_\_\_\_
2.  $\frac{7}{25}$  of 5 kg = \_\_\_\_\_
3.  $\frac{5}{6}$  of  $1\frac{1}{2}$  hours = \_\_\_\_\_
4.  $\frac{4}{5}$  of \$4.50 = \_\_\_\_\_
5.  $\frac{7}{20}$  of 3 kg = \_\_\_\_\_
6.  $\frac{2}{3}$  of  $4\frac{1}{2}$  t = \_\_\_\_\_
7.  $\frac{3}{5}$  of  $2\frac{1}{2}$  L = \_\_\_\_\_
8.  $\frac{7}{20}$  of 2 km = \_\_\_\_\_

**Exercise 2.1.7**

1. Lindsay spent  $\frac{2}{5}$  of the day sleeping. For how many hours was she asleep?  
\_\_\_\_\_  
\_\_\_\_\_
2. Alice spent  $2\frac{1}{4}$  hours shopping at the local mall and  $\frac{1}{3}$  of this time was spent in the first shop. How much longer did she spend at the mall after leaving the first shop?  
\_\_\_\_\_  
\_\_\_\_\_
3. A crowd of 24,000 people turned up to watch a Rugby League match between Sydney and Parramatta. If  $\frac{5}{8}$  of the supporters were Parramatta fans, find the number of Sydney supporters in the crowd.  
\_\_\_\_\_  
\_\_\_\_\_

**2.1.5 The Relative Sizes of Fractions**

To arrange a set of fractions in a ascending order:

- express the fractions with a common denominator
- arrange the fractions in ascending order by ordering the numerators
- express the fractions in their original form.

**Exercise 2.1.8 Insert < or > to make a true statement in each of these:**

1.  $\frac{3}{5}$  \_\_\_\_\_  $\frac{10}{15}$

2.  $\frac{5}{6}$  \_\_\_\_\_  $\frac{9}{11}$

3.  $\frac{5}{12}$  \_\_\_\_\_  $\frac{3}{5}$

4.  $\frac{7}{8}$  \_\_\_\_\_  $\frac{9}{10}$

5.  $\frac{3}{11}$  \_\_\_\_\_  $\frac{2}{7}$

**Exercise 2.1.9 Arrange these fractions in ascending order:**

1.  $\frac{1}{4}, \frac{1}{6}, \frac{3}{6}, \frac{1}{3}, \frac{5}{12}$

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2.  $\frac{4}{7}, \frac{1}{2}, \frac{3}{4}, \frac{5}{8}, \frac{8}{15}$

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3.  $\frac{1}{2}, \frac{3}{4}, \frac{2}{5}, \frac{7}{10}, \frac{9}{20}$

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4.  $\frac{7}{18}, \frac{4}{9}, \frac{13}{36}, \frac{5}{12}, \frac{1}{3}$

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**2.1.6 Expressing One Quantity as a Fraction of Another**

To express one quantity as a fraction of another:

- rewrite the question, if necessary, in the form "What fraction is  $\square$  of  $\triangle$  ?"
- express the quantities in the same units
- write  $\frac{\text{first quantity } (\square)}{\text{second quantity } (\triangle)}$ , and simplify.

**Exercise 2.1.10**

1. What fraction is \$2.50 of \$8? \_\_\_\_\_
2. What fraction is 40 minutes of  $1\frac{1}{2}$  hours? \_\_\_\_\_
3. What fraction is \$1.50 of \$5? \_\_\_\_\_
4. What fraction is \$3.50 of \$2? \_\_\_\_\_
5. What fraction is 25 minutes of 1 hour? \_\_\_\_\_
6. What fraction is 9 hours of 1 day? \_\_\_\_\_
7. What fraction is  $1\frac{1}{3}$  hours of 45 minutes? \_\_\_\_\_
8. What fraction is 64 hours of 3 days? \_\_\_\_\_

**Exercise 2.1.11**

1. Ken earns \$560 each week. He pays \$210 per week in rent. What fraction of his weekly pay does Ken pay in rent?  
\_\_\_\_\_  
\_\_\_\_\_
2. A customer paid a deposit of \$480 on a laptop with a retail price of \$1080. What fraction of the cost of the laptop is still owed?  
\_\_\_\_\_  
\_\_\_\_\_
3. The ferry fare was increased from \$2.10 to \$2.40 by the state government. By what fraction was the fare increased?  
\_\_\_\_\_  
\_\_\_\_\_

**2.1.7 Problem Solving**

1. Krystal spent \$7.80 on a pair of stockings. She spent  $\frac{3}{8}$  of her remaining money on a skirt and a blouse; after which, half her money was left. The skirt cost 8 times as much as the blouse.

(a) How much did she spend on the skirt?

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(b) How much did she have at first?

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2. Linda spent \$8.10 on a watermelon. she spent  $\frac{2}{7}$  of her remaining money on some apples and oranges; after which, half of her money was left. The amount of money she spent on the apples was twice amount she spent on the oranges.

(a) What fraction of her money did she spend on the watermelon?

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(b) If she bought 6 apples, how much did she pay for each apple?

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3. Ken spent \$8.40 on a beef steak. He then spent  $\frac{1}{7}$  of his remaining money on a cup of coffee and a muffin; after which,  $\frac{2}{3}$  of his money was left. The muffin cost 3 times as much as the coffee. How much did he pay for his muffin?

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## 2.2 Maths Challenge

### Exercise 2.2.1

1. I walk at 4 km per hour and run at 6 km per hour. I found that I can save 7 minutes and 30 seconds by running instead of walking to school in the mornings. How far do I live from school?

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2. Use the digits 1, 2, 3, 4 once each to form two two-digit numbers with the largest possible product. What is this product?

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3.  $\frac{1}{3}$  is called the reciprocal of 3. Find the sum of the reciprocals of all the factors of 24.

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4. How many different triangles can be formed if each of the sides is a whole number of centimetres, and each with perimeter 15 cm?

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5. In simplest terms, what is the value of  $\frac{0.6}{0.3} \times \frac{0.03}{0.06}$ ?

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## 2.3 Miscellaneous Exercises

### Exercise 2.3.1

1. In lowest term, how much larger is  $\frac{2008}{25} + 25$  than  $\frac{2008+25}{25}$ ?

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2. 9 apes have the same mass as 4 bears. 8 bears have the same mass as 15 cougars. 10 cougars have the same mass as 27 deer. How many deer have the same mass as 4 apes?

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3. If a proper fraction in lowest terms is subtracted from its reciprocal, the difference is  $\frac{77}{18}$ . What is the proper fraction?

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4. Express  $\frac{28 \times 26 \times 24 \times 22}{14 \times 13 \times 13 \times 11}$  as a single number in lowest terms:

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5. Express  $\frac{7}{19} \times \frac{13}{44} + \frac{7}{19} \times \frac{19}{44} + \frac{7}{19} \times \frac{25}{44} + \frac{7}{19} \times \frac{31}{44}$  as a single fraction in lowest terms.

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**Exercise 2.3.2**

1. The October price of a laptop was \$1200. Later, a November price was obtained by raising the October price by 10%. Then a December price was obtained by lowering the November price by 10%. What was the December price in dollars?

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2. On Target toys sale, the original price of every toy in a store is reduced by 20%. Later, this sale price is further reduced by another 20% to create a final price. The store could have reduced the original price directly to the final price by what single percent?

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3. A rectangular playground of length 15 m and breadth 5 m has its dimensions increased. If the length is increased by 20% and its width by 15%, calculate the new area. Express this area as a percentage of the original area.

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4. A man spends 8% of his monthly income of \$2500 on himself and 40% of the remainder on his bill and car. He then spends 10% of the remaining on his hobby.

(a) Calculate the amount he spends on his bill and car.

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(b) How much does he spend on his hobby in a year?

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