



## Grade 7: Chapter 2 Test – Operations with Rational Numbers

Student Name		Class		Date
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### MULTIPLE CHOICE QUESTIONS: NO CALCULATOR ALLOWED

1	Which fraction is equivalent to $2\frac{3}{4}$ ?			
	A	$\frac{5}{4}$		
	B	$\frac{6}{4}$		
	C	$\frac{9}{4}$		
	D	$\frac{11}{4}$		

2	What is the product of $-\frac{1}{6}$ and $\frac{5}{6}$ in simplest form?			
	A	$-\frac{1}{6}$		
	B	$-\frac{5}{36}$		
	C	$\frac{5}{36}$		
	D	$\frac{1}{6}$		

3	How many minutes are equal to $\frac{1}{3}$ of an hour?			
	A	10 minutes		
	B	15 minutes		
	C	20 minutes		
	D	30 minutes		

4	What is the multiplicative inverse of $-\frac{8}{9}$ ?			
	A	$-\frac{9}{8}$		
	B	$-\frac{8}{9}$		
	C	1		
	D	$\frac{9}{8}$		



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5	What is the quotient of $\frac{3}{2}$ and $\frac{2}{3}$ ?	
	A	$\frac{4}{9}$
	B	1
	C	$\frac{3}{2}$
D		$2\frac{1}{4}$

6	Refer to the number line shown. Which of the following rational numbers is greater than $-0.32$ ?	
	A	$-\frac{4}{10}$
	B	$-0.\overline{39}$
	C	$-\frac{3}{8}$
D		$-0.\overline{31}$

7	Write $0.\overline{7}$ as a fraction in simplest form.	
	A	$-\frac{7}{9}$
	B	$-\frac{77}{100}$
	C	$\frac{77}{100}$
	D	$\frac{7}{9}$

8	What symbol can be substituted for [ ] to make the following statement true?	
	$-5 [ ] -3 98$	
	A	>
	B	<
	C	=
D		+



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9	What is the value of the expression $4rs$ if $r = -\frac{1}{3}$ and $s = \frac{7}{8}$ ?	
	A	$-1\frac{1}{6}$
	B	$-\frac{7}{24}$
	C	$1\frac{1}{6}$
	D	$3\frac{1}{2}$

10	Simplify the expression $\frac{7a}{9bc} \div \frac{21a}{12b}$ .	
	A	$\frac{3}{4c}$
	B	$\frac{4}{3c}$
	C	$\frac{4}{9c}$
	D	$\frac{49a}{36bc}$

**MULTIPLE CHOICE SECTION:** /10

**Grade 7: Chapter 2 Test – Operations with Rational Numbers****CONSTRUCTIVE RESPONSE QUESTIONS: CALCULATOR MAY BE USED**

11

Four pieces of wood, each  $11\frac{3}{8}$  meters long, are required for building a frame. If all four pieces are cut from one board, how long should the board be, to the nearest whole meter?

marks:

/ 3

12

Abdullah bought a can of almonds. He gave  $\frac{1}{4}$  of the almonds to his brother,  $\frac{1}{6}$  to his friend, and kept the rest for himself. What fraction of the almonds did he keep for himself?

marks:

/ 3

13

a) Write a division problem that has a divisor of  $\frac{a}{3}$  and a quotient  $\frac{5b}{a}$ .

(Hint: The divisor is what we divide by, and the quotient is the result.)

b) Use the same fractions above to find the dividend.

marks:

/ 3

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14

Find the area and the perimeter of a rectangle with a length of 8 meters and a width of  $6\frac{2}{9}$  meters. Write each answer as a fraction and as a decimal. Use bar notation if necessary.

marks: /6

<b>MULTIPLE CHOICE SECTION:</b>	/10
<b>EXTENDED RESPONSE SECTION:</b>	/15
<b>TOTAL MARKS:</b>	/25
<b>PERCENT:</b>	%

Grade	7	Lesson(s)	2-1, 2-2, 2-3, 2-4, 2-5, 2-6
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## Grade 7: Chapter 2 Test – Operations with Rational Numbers

## Answer Key

## MULTIPLE CHOICE QUESTIONS:

Q1	D
Q2	A
Q3	C
Q4	D
Q5	C
Q6	D
Q7	D
Q8	B
Q9	A
Q10	C

## CONSTRUCTIVE RESPONSE QUESTIONS:

Q11	<b>Ans: 46 meters or 46 m</b>	
	1. multiply fraction by whole number 2. answer 3. rounding	<ul style="list-style-type: none"> <li>• <math>4 \times 11 \frac{3}{8}</math></li> <li>• <math>45 \frac{1}{2} \text{ m}</math> or <math>44 \frac{12}{8} \text{ m}</math></li> <li>• 46 m</li> </ul>
<ul style="list-style-type: none"> <li>• The 1<sup>st</sup> mark is awarded for the correct multiplication expression.</li> <li>• The 2<sup>nd</sup> mark is awarded for the correct answer.</li> <li>• The 3<sup>rd</sup> mark is awarded for rounding to the nearest whole number.</li> <li>• If the pupil does not state unit, you may still award the mark, but make the pupil aware that this is common practice.</li> </ul>		

Q12	<b>Ans: <math>\frac{7}{12}</math></b>	
	1. Add like fractions. 2. subtract fraction from whole number 3. answer	<ul style="list-style-type: none"> <li>• <math>\frac{1}{4} + \frac{1}{6} = \frac{5}{12}</math></li> <li>• <math>1 - \frac{5}{12}</math></li> <li>• <math>\frac{7}{12}</math></li> </ul>
<ul style="list-style-type: none"> <li>• The 1<sup>st</sup> mark is awarded for adding fractions.           <ul style="list-style-type: none"> <li>◦ Common mistakes will be <math>\frac{1}{10}</math> and <math>\frac{2}{10}</math>.</li> </ul> </li> <li>• The 2<sup>nd</sup> mark is awarded for showing a subtraction expression.           <ul style="list-style-type: none"> <li>◦ Award the mark even if the answer from the 1<sup>st</sup> mark is wrong, but the pupil wrote the subtraction expression correctly.</li> </ul> </li> <li>• The 3<sup>rd</sup> mark is awarded for the answer.           <ul style="list-style-type: none"> <li>◦ If the answer from the 1<sup>st</sup> mark is wrong but subtracted correctly from 1, award the 3<sup>rd</sup> mark for correctly using this value.</li> </ul> </li> <li>• It is possible for a pupil to go from adding the fractions to the answer and missing the working for the 2<sup>nd</sup> mark. In this scenario, if the answer for the 3<sup>rd</sup> mark is stated correctly after adding the fractions, award both the 2<sup>nd</sup> and 3<sup>rd</sup> marks.</li> </ul>		



## Grade 7: Chapter 2 Test – Operations with Rational Numbers

**Q13**

**Ans:**  $\frac{5b}{3}$

1. dividend  $\div$  divisor = quotient

- $— \div \frac{a}{3} = \frac{5b}{a}$  OR

2. calculate denominator of dividend

- $\frac{5b}{a} \times \frac{a}{3} = —$

3. calculate numerator of dividend

- 3

- The 1<sup>st</sup> mark is awarded for writing the expression.
- The 2<sup>nd</sup> mark is awarded for the denominator 3.
- The 3<sup>rd</sup> mark is awarded for the numerator 5b.

- 5b

**Q14**

**Ans:**  $\text{Area} = 49\frac{7}{9} \text{ m}^2 = 49.\bar{7} \text{ m}^2$

**Perimeter** =  $28\frac{4}{9} \text{ m} = 28.\bar{4} \text{ m}$

**Area**

1. multiplying fractions
2. answer
3. answer as a decimal

**Perimeter**

4. adding fractions
5. answer
6. answer as a decimal

**Area**

- $8 \times 6\frac{2}{9}$
- $49\frac{7}{9} \text{ m}^2$

**Perimeter**

- $(8 + 6\frac{2}{9}) \times 2$  OR  
 $8 + 8 + 6\frac{2}{9} + 6\frac{2}{9}$
- $28\frac{4}{9} \text{ m}$
- $49.\bar{7} \text{ m}^2$
- $28.\bar{4} \text{ m}$

- The 1<sup>st</sup> mark is awarded for multiplying a fraction by a whole number for the area.
- The 2<sup>nd</sup> mark is awarded for writing the correct area as a fraction.
- The 3<sup>rd</sup> mark is awarded for converting the area to a decimal.
- The 4<sup>th</sup> mark is awarded for calculating the perimeter by either method shown above.
- The 5<sup>th</sup> mark is awarded for writing the correct perimeter as a fraction.
- The 6<sup>th</sup> mark is awarded for converting the perimeter to a decimal.
- If the pupil does not state unit, you may still award the mark, but make the pupil aware that this is common practice.
- If working for the 1<sup>st</sup> mark isn't shown but the correct answer for the 2<sup>nd</sup> mark is written, award the 1<sup>st</sup> and 2<sup>nd</sup> marks.
- If working for the 4<sup>th</sup> mark isn't shown but the correct answer for the 5<sup>th</sup> mark is written, award the 4<sup>th</sup> and 5<sup>th</sup> marks.
- If the 2<sup>nd</sup> mark isn't awarded, the 3<sup>rd</sup> mark can still be awarded.
- If the 5<sup>th</sup> mark isn't awarded, the 6<sup>th</sup> mark can still be awarded.
- If only the answer is written as a decimal for the area, award the 3<sup>rd</sup> mark only.
- If only the answer is written as a decimal for the perimeter, award the 6<sup>th</sup> mark only.