



CARLINGFORD HIGH SCHOOL

DEPARTMENT OF MATHEMATICS

Year 7
Mathematics Exam

Term 2 Week 5A 2017

Name : Answers

Circle your Class : 7C 7A 7R 7L 7I 7N 7G

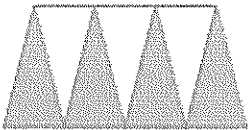
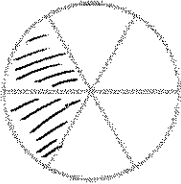
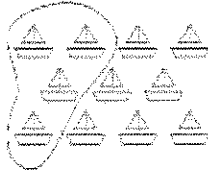
Time allowed : 55 Minutes

Instructions

- No calculators allowed.
- Show all necessary working by using blue/ black pen except graphs / diagrams.
- Marks may be deducted for untidy setting out.
- Questions marked with an asterisk (*) are extension level.

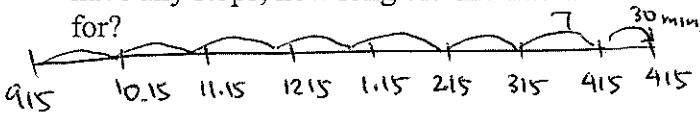
Topic	Fractions	Time	Total
Standard	/40	/ 33	/ 73
Extension*	/ 8	/ 2	/ 10
Total	/ 48	/ 35	/ 83

FRACTIONS (48 marks) Show all necessary working

<p>1. What fraction is unshaded ? [1]</p>  <p style="text-align: right;"><u>$\frac{3}{7}$</u></p>	<p>10. Complete the equivalent fractions. [1]</p> $\frac{3}{5} = \frac{\boxed{12}}{20}$
<p>2. Shade the fraction indicated. [1]</p>  <p style="text-align: right;">$\frac{2}{3}$</p>	<p>11. Arrange these fractions in ascending order. [2]</p> $\frac{1}{3}, \frac{3}{5}, \frac{11}{12}, \frac{2}{15} \rightarrow \frac{20}{60}, \frac{36}{60}, \frac{55}{60}, \frac{8}{60}$ $\therefore \frac{2}{15}, \frac{1}{3}, \frac{3}{5}, \frac{11}{12}$
<p>3. What fraction of objects has been selected ? [1]</p>  <p style="text-align: right;"><u>$\frac{4}{11}$</u></p>	<p>12. Circle the largest fraction. [1]</p> $\frac{4}{5} \text{ or } \left(\frac{5}{6} \right) \text{ or } \frac{7}{9}$
<p>4. Pat has completed $\frac{3}{5}$ of a race. [1] What fraction of the race does he still have to run ?</p> <p style="text-align: right;">$\frac{2}{5}$</p>	<p>13. Simplify the fraction fully $\frac{49}{63} = \frac{7}{9}$ [1]</p> <p>14. What is the reciprocal of $\frac{5}{6}$? $\frac{6}{5}$ [1]</p>
<p>5. Find $\frac{4}{5}$ of $1\frac{1}{2}$ hours in minutes. [2]</p> $\frac{4}{5} \times 90 = 72 \text{ mins.}$	<p>15. Evaluate the following:</p> <p>a $\frac{1}{9} + \frac{4}{9} = \frac{5}{9}$ [1]</p> <p>b $\frac{4}{7} + \frac{3}{14} = \frac{8}{14} + \frac{3}{14} = \frac{11}{14}$ [2]</p> <p>c $\frac{3}{5} + \frac{2}{7} = \frac{21+10}{35} = \frac{31}{35}$ [2]</p> <p>d $\frac{4}{7} - \frac{3}{7} = \frac{1}{7}$ [1]</p> <p>e $\frac{7}{10} - \frac{2}{5} = \frac{7}{10} - \frac{4}{10} = \frac{3}{10}$ [2]</p> <p>f $\frac{4}{7} - \frac{2}{5} = \frac{20-14}{35} = \frac{6}{35}$ [2]</p>
<p>6. Write $\frac{625}{100}$ as a simplest mixed number. [2]</p> $\frac{625}{100} = \frac{25}{4} = 6\frac{1}{4}$	
<p>7. What fraction is 50 cents of \$3 ? [2] (Answer in simplest form)</p> $\frac{50}{300} = \frac{1}{6}$	
<p>8. How many halves in 4 whole ? [1]</p> <p style="text-align: center;">8</p>	
<p>9. Write $6\frac{5}{7}$ as an improper fraction. [1]</p> $\frac{47}{7}$	

<p>16. Evaluate the following:</p> <p>a $\frac{1}{3} \times \frac{2}{3} = \frac{2}{9}$ [1]</p> <p>b $\frac{4}{9} \times \frac{3}{8} = \frac{1}{3} \times \frac{1}{2}$ [2] $= \frac{1}{6}$</p> <p>c $\frac{3}{5} \div \frac{2}{3} = \frac{3}{5} \times \frac{3}{2}$ [2] $= \frac{9}{10}$</p> <p>d $\frac{4}{7} \div 5 = \frac{4}{7} \times \frac{1}{5}$ [2] $= \frac{4}{35}$</p>	<p>*18 A tank of water started to leak. [2]</p> <p>On the first day, $\frac{1}{4}$ of the water in the tank was lost;</p> <p>on the next day, $\frac{1}{3}$ of what was left was lost;</p> <p>and on the third day, $\frac{1}{2}$ of the remainder was lost.</p> <p>What fraction of the tank now contained water?</p> <p>$\frac{3}{4} \times \frac{2}{3} \times \frac{1}{2} = \frac{1}{4}$</p>
<p>*17. Evaluate the following:</p> <p>a $4\frac{3}{4} - 2\frac{8}{9} = \frac{19}{4} - \frac{26}{9}$ [2] $= \frac{171 - 104}{36}$ $= \frac{67}{36}$</p> <p>b $3\frac{2}{3} \times 2\frac{3}{4} = \frac{11}{3} \times \frac{11}{4}$ [2] $= \frac{121}{12}$ or $10\frac{1}{12}$</p> <p>c $2\frac{3}{4} \div 4\frac{2}{3} = \frac{11}{4} \div \frac{14}{3}$ [2] $= \frac{11}{4} \times \frac{3}{14}$ $= \frac{33}{56}$</p>	<p>19. Fill in the gaps by choosing the correct word from the word list. [2]</p> <p>common flip numerals reciprocal cancel</p> <p>a To find the <u>reciprocal</u> of a number, swap the numerator and denominator. [1]</p> <p>b To divide fractions, change the \div to \times and <u>flip</u> the second fraction. [1]</p> <p>c It is often easier to <u>cancel</u> or simplify numerators and denominators before multiplying. [1]</p> <p>d Fractions must have the same denominator to be added or subtracted. This is done by finding a <u>common</u> denominator. [1]</p> <p>e Mixed <u>numerals</u> can be changed to improper fractions. [1]</p>

TIME (35 marks) Show all necessary working

<p>1. Fill in the gap by choosing the correct word from the word lists below:</p> <p>twenty-four noon add four ahead</p> <p>a The time 12 <u>noon</u> is 12 pm and 12 midnight is 12 am. [1]</p> <p>b 24-hour time is expressed as <u>four</u> digit number. [1]</p> <p>c To convert 'pm' times to 24-hour time, <u>add</u> 12 hours, and write the four digits. [1]</p> <p>d The world is divided into <u>twenty-four</u> one-hour time zones. [1]</p> <p>e Places to the east are <u>ahead</u> of those to the west. [1]</p>	<p>5. Write each of the following using the 24-hour clock.</p> <p>a 3.20 am = <u>1520</u> [1]</p> <p>b 4.42 pm = <u>1642</u> [1]</p> <p>6. Convert each of the following 24-hour times to 12-hour times.</p> <p>a 0725 = <u>7:25 am</u> [1]</p> <p>b 2121 = <u>9:21 pm</u> [1]</p> <p>7. Convert each of the following.</p> <p>a 4 days = <u>96</u> hours [1]</p> <p>b 120 seconds = <u>2</u> minutes [1]</p> <p>c 96 hours = <u>4</u> days [1]</p> <p>d 360 minutes = <u>6</u> hours [1]</p> <p>e 12 minutes = <u>720</u> seconds [1]</p> <p>f 2 hours = <u>7200</u> seconds [1]</p>
<p>2. State how many minutes are in each of the following.</p> <p>a 3 hours = <u>180</u> minutes. [1]</p> <p>b $1\frac{3}{4}$ hours = <u>105</u> minutes. [1]</p> <p>c 1 day <u>1440</u> minutes. [1]</p>	<p>8. Jenny decides to go on a journey. She starts at 9.15 am and arrives at her destination at 4.45pm. If Jenny did not have any stops, how long did she travel for? [2]</p>  <p style="text-align: center;"><u>7 hours & 30 mins.</u></p>
<p>3. Change the following to hours and minutes.</p> <p>a 220 minutes = <u>3 h 40 mins</u> [1]</p> <p>b 800 minutes = <u>13 h 20 mins</u> [1]</p>	<p>9. Circle the leap year(s) [1]</p> <p style="text-align: center;">2006 <u>1804</u> 2802</p>
<p>4. Change the following to minutes.</p> <p>a 10 hours 35 minutes = <u>635 mins</u> [1]</p> <p>b 3 hours 42 minutes = <u>222 mins</u> [1]</p>	<p>10. How many:</p> <p>a days in a year? <u>365</u> [1]</p> <p>b fortnights in a year? <u>26</u> [1]</p> <p>c months in a year? <u>12</u> [1]</p> <p>d years in 5 decades? <u>50</u> [1]</p>

11. Complete the following calculations:

a

h	min	s	
4	36	25	+
2	15	45	
<hr/>			
6	51	70	

= 6:52:10

[2]

b

h	min	s	
7	18	37	-
3	46	43	
<hr/>			

change to

6	77	97	-
3	46	43	
<hr/>			
3	31	54	
<hr/>			

[2]

*12. Lisa's grandmother lives in the UK and wants to ring Lisa for her birthday in Australia. At what time (GMT) should her grandmother ring if she wants to speak to Lisa at 6pm EST? (Hint: Australia is 150° ahead of UK & every 15° = 1 hour) [2]

$$150^{\circ} \div 15^{\circ} = 10 \text{ hours}$$

Go back 10 hours from 6pm,
we get 8am.

END OF EXAM