

# TEST

# 20

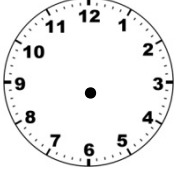

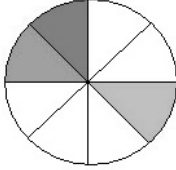
# MATHEMATICS TEST 20

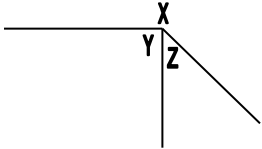
# TIME- 75 MINUTES

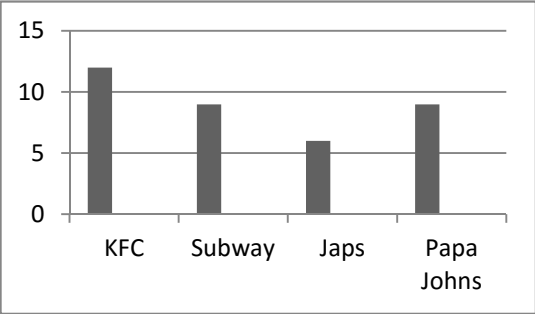
## SECTION 1

Each question is worth 1 mark. Answer ALL questions. Show ALL working in the Working Column.

No.	Items	Working Column	Marks	
1.	What is 0.125 as a percentage? Answer: _____	<b>12.5%</b>		
2.	List the prime numbers from the list below. <table border="1" style="margin: 5px auto; width: 150px;"><tr><td>2, 3, 4, 5, 6, 7, 8, 9</td></tr></table> Answer: _____	2, 3, 4, 5, 6, 7, 8, 9	<b>2, 3, 5, 7</b>	
2, 3, 4, 5, 6, 7, 8, 9				
3.	Write in figures: Three hundred thousand, two hundred and nineteen. Answer: _____	<b>300 219</b>		
4.	Find 40% of 150. Answer: _____	$\frac{40}{100} \times \frac{150}{1}$ <b>= 60</b>		
5.	4.26 – 2.13 Answer: _____	<b>2.13</b>		
6.	32 is $\frac{1}{5}$ of a number. What is the number? Answer: _____	$\frac{1}{5} = 32$ $1 = 32 \times 5$ <b>= 160</b>		
7.	$2.85 = (2 \times \square) + (8 \times \frac{1}{10}) + (5 \times \frac{1}{100})$ . The number that fits in the box is: Answer: _____	<b><math>\square = 1</math></b>		

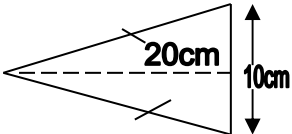
8.	Draw in the hands to show the time.  <b>8:10</b>    Answer: _____									
9.	After spending \$21.35, Newton remains with \$18.85. How much money did he have before?  Answer: _____	$\$21.35 + \$18.85$ $= \$40.20$								
10.	How many thirds can Jamie get from 5 sausage rolls?  Answer: _____	$1 = 3 \text{ - thirds}$ $5 = 3 \times 5$ $= 15 \text{ thirds}$								
11.	Put in the missing number to complete the sequence.  <table border="1" data-bbox="277 1108 808 1150"> <tr> <td>1</td> <td>1</td> <td>2</td> <td>6</td> <td>24</td> <td>120</td> <td></td> </tr> </table>  Answer: _____	1	1	2	6	24	120		$120 \times 6$ $= 720$	
1	1	2	6	24	120					
12.	What is the shaded part as a fraction?    Answer: _____	$\frac{3}{8}$								
13.	Express $\frac{8}{10} + \frac{9}{100}$ as a decimal number.  Answer: _____	$0.8 + .09$ $0.89$								

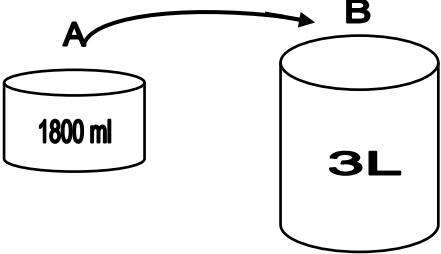
14.	Round 2604 to the nearest hundred.  Answer: _____	$2604 \approx 2600$	
15.	Write 8kg 64g in grams.  Answer: _____ grams	$8\text{kg} = 8000\text{g} + 64\text{g}$ $= 8064\text{g}$	
16.	Rearrange the fractions below from greatest to least value.  $\frac{4}{5}$ $\frac{2}{3}$ $\frac{5}{6}$  Answer: _____	$\frac{4}{5}$ $\frac{2}{3}$ $\frac{5}{6}$  $\frac{24}{30}$ $\frac{20}{30}$ $\frac{25}{30}$  $\frac{5}{6}$ $\frac{4}{5}$ $\frac{2}{3}$	
17.	The diagram below shows three angles formed. Which of the angles X, Y or Z is reflex?    Answer: _____	<b>X</b>	
18.	Use ONE symbol below to complete the number statement.  <div style="border: 1px solid black; padding: 5px; display: inline-block;"> <math>=</math>    <math>&lt;</math>    <math>&gt;</math> </div>  $\frac{4}{5}$ <span style="border: 1px solid black; padding: 2px 10px;"> </span> 65%  Answer: _____	$\frac{4}{5} > 65\%$	

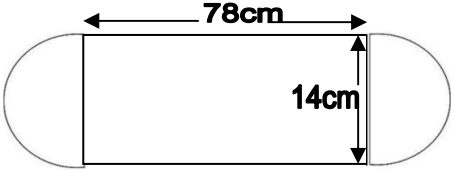
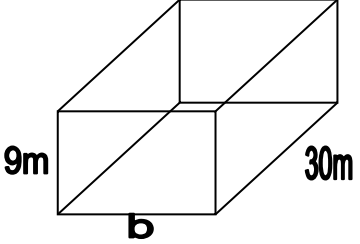
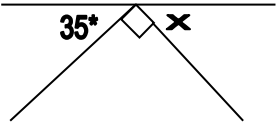
19.	<p>What is the missing number below?</p> $\frac{16}{48} = \frac{8}{x}$ <p>Answer: _____</p>	$\frac{16}{48} = \frac{8}{x}$ $48 \div 2 = 24$ $x = 24$	
20	<p>The bar chart below shows the fast foods pupils in a Standard 5 class enjoy the most.</p>  <p>What is the modal fast food enjoyed?</p> <p>Answer: _____</p>	<p><b>KFC</b></p>	

## SECTION 2

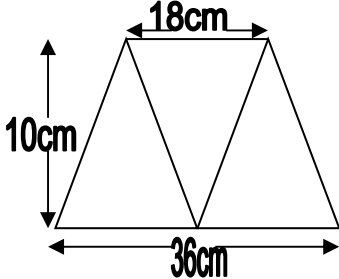
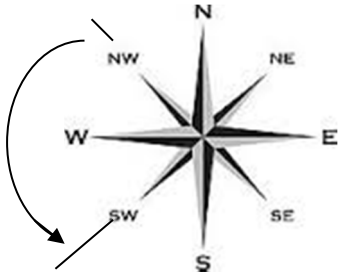
**Each question is worth either 2 or 3 marks. Answer ALL questions. Show ALL working in the Working Column.**

No.	ITEMS	Working Column																								
21	<p>How much more is <math>\frac{4}{5}</math> than 0.25 as a decimal fraction?</p> <p>Answer: _____(2)</p>	$\frac{4}{5} = 0.8$ $0.8 - 0.25 = 0.55$ <p><b>0.55</b></p>																								
22.	<table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <tr> <td style="padding: 0 10px;">g</td> <td style="padding: 0 10px;">mg</td> <td></td> </tr> <tr> <td style="padding: 0 10px;">5</td> <td style="padding: 0 10px;">190</td> <td style="padding: 0 10px;">-</td> </tr> <tr> <td style="border-top: 1px solid black; padding: 0 10px;">3</td> <td style="border-top: 1px solid black; padding: 0 10px;">520</td> <td></td> </tr> <tr> <td style="border-top: 1px solid black; padding: 0 10px;"></td> <td style="border-top: 1px solid black; padding: 0 10px;"></td> <td></td> </tr> </table> <p>Answer: _____(2)</p>	g	mg		5	190	-	3	520					<table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <tr> <td style="padding: 0 10px;">g</td> <td style="padding: 0 10px;">mg</td> <td></td> </tr> <tr> <td style="padding: 0 10px;">5</td> <td style="padding: 0 10px;">1190</td> <td style="padding: 0 10px;">-</td> </tr> <tr> <td style="border-top: 1px solid black; padding: 0 10px;">3</td> <td style="border-top: 1px solid black; padding: 0 10px;">520</td> <td></td> </tr> <tr> <td style="border-top: 1px solid black; padding: 0 10px;">1</td> <td style="border-top: 1px solid black; padding: 0 10px;">670</td> <td></td> </tr> </table> <p><b>1kg 670mg</b></p>	g	mg		5	1190	-	3	520		1	670	
g	mg																									
5	190	-																								
3	520																									
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3	520																									
1	670																									
23.	<p>200 cups cost \$24.00.</p> <p>(a) What is the cost of 400 cups?</p> <p>Answer: _____(1)</p> <p>(b) Cups are packed in sets of 25 and sold at the same rate. What is the cost of 1 pack?</p> <p>Answer: _____(2)</p>	<p>(a) 200 cups = \$24 400 cups = \$24 x 2 <b>=\$48</b></p> <p>(b) 200 cups = \$24 1 cup = <math>\frac{\\$24}{200}</math> 25 cups = <math>\frac{24}{200} \times \frac{25}{1}</math> <b>= \$3</b></p>																								
24.	<div style="text-align: center;">  </div> <p>(a) Name the shape above.</p> <p>Answer: _____(1)</p> <p>(b) Calculate its area.</p> <p>Answer: _____(2)</p>	<p>(a) <b>Isosceles Triangle</b></p> <p>(b) Area of Triangle = <math>\frac{B \times H}{2}</math>  <math>= \frac{20 \times 10}{2}</math>  <b>= 100cm<sup>2</sup></b></p>																								














25.	<p>1200 packs at a supermarket contain 3 flavours of juice. <math>\frac{1}{4}</math> of the pack is orange, <math>\frac{3}{5}</math> of the remainder is grapefruit and the rest of the packs are fruit punch. How many packs of fruit punch are there at the supermarket?</p> <p>Answer: _____(3)</p>	<p>Orange = <math>\frac{1}{4} \times \frac{1200}{1}</math> = 300 orange juice</p> <p>Remainder = <math>1200 - 300</math> = 900</p> <p>Grapefruit = <math>\frac{3}{5} \times \frac{900}{1}</math> = 540 grapefruits</p> <p>Fruit Punch = <math>1200 - (300 + 540)</math> = <math>1200 - 840</math> = <b>360</b></p>	
26.	 <p>The contents of cylinder A is poured into the uncovered cylinder B. Cylinder B is then filled with water. How many more millimeters of water is needed to fill cylinder B?</p> <p>Answer: _____(2)</p>	<p>3L = 3000ml</p> <p>Water needed = <math>3000 - 1800</math> = <b>1200ml</b></p>	

27.	<p>The diagram below shows a model racing car circuit.</p>  <p>Calculate the distance around the circuit.</p> <p>Answer: _____(3)</p>	<p>Circumference = <math>D \times \pi</math>  <math>= 14 \times \frac{22}{7}</math>  <math>= 44\text{cm}</math></p> <p>Distance around = <math>(78 \times 2) + 44</math>  <math>= 156 + 44</math>  <math>= \mathbf{200\text{cm}}</math></p>	
28.	<p>The solid has a volume of <math>2430\text{m}^3</math>. What is the length of b?</p>  <p>Answer: _____(2)</p>	<p>Width = <math>\frac{\text{Volume}}{\text{L} \times \text{H}}</math>  <math>= \frac{2430}{9 \times 30}</math>  <math>= \frac{2430}{270}</math>  <math>= \mathbf{9\text{m}}</math></p>	
29.	 <p>(a) What is the value of angle x?</p> <p>Answer: _____(1)</p>	<p>Angle <math>x = 180^\circ - (35^\circ + 90^\circ)</math>  <math>= 180^\circ - 125^\circ</math>  <math>= \mathbf{55^\circ}</math></p>	
30.	<p>A class has 35 pupils. On Monday 80% is present. How many pupils are absent?</p> <p>Answer: _____(2)</p>	<p>Present = 80% Absent = 20%</p> <p>Absent = <math>\frac{1}{5} \times \frac{35}{1}</math>  <math>= \mathbf{7 \text{ pupils}}</math></p>	



31.	<p>Three children, Chris, Rik and Sheldon have a mean of 33 marbles.</p> <p>(a) How many marbles do they have altogether?</p> <p>Answer: _____(1)</p> <p>(b) Chris has 10 less marbles than Rik. If Chris has 23 marbles, how many more marbles does Sheldon have than Rik?</p> <p>Answer: _____(2)</p>	<p>(a) Total = Mean x N(n)  <math>= 33 \times 3</math>  <math>= \mathbf{99 \text{ marbles}}</math></p> <p>(b) Chris = 23  Rik = 33 (23 + 10)  Sheldon = <math>99 - (23 + 33)</math>  <math>= 99 - 56</math>  <math>= 43</math>  <b>Difference between Sheldon and Rik</b>  <math>= 43 - 33</math>  <math>= \mathbf{10 \text{ marbles}}</math></p>	
32.	<p>Calculate the area of the shape below.</p>  <p>Answer: _____(3)</p>	<p>Area of one triangle = <math>\frac{B \times H}{2}</math>  <math>= \frac{18 \times 10}{2}</math>  <math>= \frac{180}{2}</math>  <math>= 90\text{cm}^2</math></p> <p>Area of 3 triangles = <math>90 \times 3</math>  <math>= \mathbf{270\text{cm}^2}</math></p>	
33.	<p>Through how many degrees has the compass pointer been turned?</p>  <p>Answer: _____(2)</p>	<p>8 spaces = <math>360^{\circ}</math>  1 space = <math>360^{\circ} \div 8</math>  <math>= 45^{\circ}</math></p> <p>2 spaces = <math>45^{\circ} \times 2</math>  <math>= \mathbf{90^{\circ}}</math></p>	

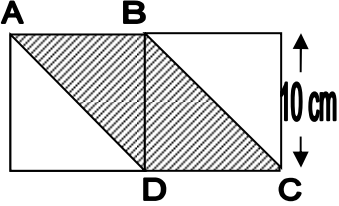
34.	<p>Javed spent 60% of his money on lunch and remained with \$18.00. How much money did he have before lunch?</p> <p>Answer: _____(2)</p>	<p style="text-align: center;">Spent = 60% Remained with = 40% 40% = \$18 <math>\frac{2}{5} = \\$ 18</math> <math>1 = \frac{18}{1} \times \frac{5}{2}</math> <b>= \$45</b></p>	
35.	<p>The fountain at a park has a circumference of 132m. Calculate the RADIUS of the fountain.</p> <p>Answer: _____(3)</p>	<p style="text-align: center;">Diameter = <math>C \div \pi</math> <math>= 132 \div \frac{22}{7}</math> <math>= \frac{132}{1} \times \frac{7}{22}</math> <math>= 42\text{m}</math> <math>R = D \div 2</math> <math>= 42 \div 2</math> <b>= 21m</b></p>	
36	<p>Snacked size packs of potato chips are sold to a café at \$8.00 per dozen. The café buys 6 dozen packs and retails each pack for \$1.50. How much profit was made on all the packs of potato chips?</p> <p>Answer: _____(3)</p>	<p>1 dozen = \$8 6 dozens = \$8 x 6 C.P = \$48 Total = 12 x 6 = 72  S.P = \$1.50 x 72 = \$108  Profit = S.P – C.P = \$108 - \$48 <b>= \$60</b></p>	
37.	<p>Insert the two missing numbers in the pattern below.</p> <p>1, 4, 9, 16, _____, 36, _____.</p> <p>Answer: _____(2)</p>	<p style="text-align: center;"><math>5^2 = 25</math>   <math>7^2 = 49</math></p>	
38	<p>A car travels 60km in 24 minutes. How far will the car travel in <math>1\frac{1}{2}</math> hours?</p> <p>Answer: _____(3)</p>	<p style="text-align: center;">24 mins = 60km 1 min = <math>\frac{60}{24}</math> 90mins = <math>\frac{60}{24} \times \frac{90}{1}</math> <b>= 225km</b></p>	

39.	<p>A loan of \$5000.00 taken for three years generated an amount of \$5750.00 when completely repaid. Calculate the rate at which the loan was given.</p> <p>Answer: _____% (3)</p>	$R = \frac{S.I \times 100}{P \times T}$ $= \frac{750 \times 100}{5000 \times 3}$ $= 5\%$									
40.	<p>The pictograph below shows persons seated in four rows in a theatre.</p> <table border="1" data-bbox="269 558 805 932"> <tr> <td data-bbox="269 558 393 653">Row 1</td> <td data-bbox="393 558 805 653">  </td> </tr> <tr> <td data-bbox="269 653 393 747">Row 2</td> <td data-bbox="393 653 805 747">  </td> </tr> <tr> <td data-bbox="269 747 393 842">Row 3</td> <td data-bbox="393 747 805 842">  </td> </tr> <tr> <td data-bbox="269 842 393 932">Row 4</td> <td data-bbox="393 842 805 932">  </td> </tr> </table> <p style="text-align: center;">  = 5 persons     </p> <p>How many more persons must be seated to make a total of 100?</p> <p>Answer: _____(2)</p>	Row 1		Row 2		Row 3		Row 4		$16 \times \text{star} = 16 \times 5$ $= 80$ $100 - 80 = 20 \text{ more persons}$	
Row 1											
Row 2											
Row 3											
Row 4											

### SECTION 3

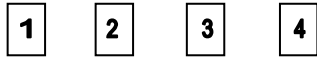
**Each question is worth 5 marks. Answer ALL questions. Show ALL working in the Working Column.**

NO	ITEMS	WORKING COLUMN								
41	<p>Employees at a factory are paid according to the table below.</p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse; width: 80%;"> <thead> <tr> <th style="text-align: center;">TIME</th> <th style="text-align: center;">WAGE PER HOUR</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;"> <b>Regular Time</b>                      8 hours per weekday                 </td> <td style="text-align: center;">\$18.00</td> </tr> <tr> <td style="text-align: center;"> <b>Overtime</b>                      After 4:00 pm on weekdays                 </td> <td style="text-align: center;"> <b>Time and a half</b>                      regular wage                 </td> </tr> <tr> <td style="text-align: center;"> <b>Weekends</b>                      6 hours on Saturdays                 </td> <td style="text-align: center;"> <b>Two times</b>                      regular wage                 </td> </tr> </tbody> </table> <p>(a) In addition to his regular hours, Josiah works 6 overtime hours and Saturday last week. Calculate his total wage for last week.</p> <p>Answer: _____ (3)</p> <p>(b) Jamie earns \$1044.00 by working on weekdays only. How many overtime hours did Jamie work?</p> <p>Answer: _____ (2)</p>	TIME	WAGE PER HOUR	<b>Regular Time</b> 8 hours per weekday	\$18.00	<b>Overtime</b> After 4:00 pm on weekdays	<b>Time and a half</b> regular wage	<b>Weekends</b> 6 hours on Saturdays	<b>Two times</b> regular wage	<p>(a) 1 week = <math>8 \times 5</math>                      = 40 hours                      1 hour = \$18                      40 hours = <math>\\$18 \times 40</math>                      = \$ 720                      1 hour overtime (Saturday) = <math>\\$18 \times 2</math>                      = \$36                      6 hours = <math>\\$36 \times 6</math>                      = \$ 216                      6 overtime hours = <math>6 \times (18 \times 1.5)</math>                      = <math>6 \times 27</math>                      = \$162                      Total = <math>\\$720 + \\$216 + \\$162</math>                      = <b>\$1098</b></p> <p>(b) 1 hour overtime = <math>\\$18 \times 1.5</math>                      = \$27</p> <p>Overtime wage = <math>\\$1044 - \\$720</math>                      = \$324                      No. of overtime hours = <math>\\$324 \div \\$27</math>                      = <b>12 hours</b></p>
TIME	WAGE PER HOUR									
<b>Regular Time</b> 8 hours per weekday	\$18.00									
<b>Overtime</b> After 4:00 pm on weekdays	<b>Time and a half</b> regular wage									
<b>Weekends</b> 6 hours on Saturdays	<b>Two times</b> regular wage									

<p>42.</p>	<p>A company buys a cell phone then resells it for \$2750.00 to make a profit of 10%.</p> <p>(a) How much did the cell phone cost the company?</p> <p>Answer: _____(3)</p> <p>(b) A customer pays 15% VAT on the phone. Calculate the final price the customer paid for the phone?</p> <p>Answer: _____(2)</p>	<p>(a) <math>\frac{110}{100} = \\$2750</math>  <math>1 = \frac{2750}{1} \times \frac{100}{110}</math>  <b>= \$2500</b></p> <p>(b) VAT = 15%  Final Price = \$2750 x 15%  <math>= \frac{2750}{1} \times \frac{15}{100}</math>  = \$412.50  Total = \$2750 + \$412.50  <b>= \$3162.50</b></p>	
<p>43.</p>	<p>Two similar squares are combined and the shape ABCD is shaded.</p>  <p>(a) Name the shape ABCD.</p> <p>Answer: _____(1)</p> <p>(b) What is the area of the shape ABCD?</p> <p>Answer: _____(2)</p> <p>(c) Each diagonal line is 15cm long. Calculate the perimeter of the shape ABCD.</p> <p>Answer: _____(2)</p>	<p>(a) <b>Parallelogram</b></p> <p>(b) Area of triangle = <math>\frac{B \times H}{2}</math>  <math>= \frac{10 \times 10}{2}</math>  = 50cm<sup>2</sup></p> <p>Area of ABCD = 50 + 50  <b>= 100cm<sup>2</sup></b></p> <p>(c) Perimeter of ABCD  = 15 + 15 + 10 + 10  <b>= 50cm</b></p>	

44.

(a) A set of cards in a game are worth 1,2,3 or 4 points as shown.



Four players drew 3 cards each and recorded their points on the table. The table is incomplete.

Players	Draws			Total	Frequency
	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>		
Marc	3	3	4	10	III III
Justin	4	2	3	9	III IIII
Johann	3	4		9	III IIII
Adrian	4	3	1		
Total					

(a) Complete the table by placing the missing information for Johann and Adrian.

(2)

(b) What was the total scored for all the players?

Answer: \_\_\_\_\_(1)

(c) What is the mean score per card selected by the players?

Answer: \_\_\_\_\_(2)

(a)

Johann	3	4	2	9	<del>III</del> IIII
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Adrian	4	3	1	8	<del>III</del> IIII
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(b) Total = 10 + 9 + 9 + 8  
= 36

(c) Mean = 36 ÷ 12  
= 3

<p>45.</p>	<p>Five family-sized pizzas, each with 18 slices were bought for a family get-together.</p> <p>(a) How many slices of pizza were there?</p> <p>Answer_____ (1)</p> <p>(b) After the get-together, one sixth of one pizza was left over. How many slices of pizza were left over?</p> <p>Answer_____ (2)</p> <p>(c) Each person attending the get-together ate 3 slices of pizza. How many persons attended the get-together?</p> <p>Answer_____ (2)</p>	<p>(a) 1 pizza = 18 slices  5 pizzas = <math>18 \times 5</math>  = <b>90 slices</b></p> <p>(b) Left over = <math>\frac{1}{6} \times \frac{18}{1}</math>  = <b>3 slices</b></p> <p>(c) Eaten = <math>90 - 3</math>  = 87 slices</p> <p>No. of persons = <math>87 \div 3</math>  = <b>29 persons attended</b></p>	
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<p>46.</p>	<p>At an award ceremony, there are tables for 4 guests or 6 guests. There are nine tables for 4 guests and fifteen for 6 guests.</p> <p>(a) What is the maximum number of guests that can sit at the 6 seater tables?</p> <p>Answer: _____(1)</p> <p>(b) In the morning there are 122 guests seated. All the six seater tables are filled. What is the least number of 4 seater tables that are left unoccupied?</p> <p>Answer: _____(2)</p> <p>(c) In the afternoon, there are 60 guests. An EQUAL number of 4 seater and 6 seater tables are used. How many of each type of tables are used?</p> <p>Answer: _____(2)</p>	<p>(a) Six Seaters = <math>15 \times 6</math> = 90 persons</p> <p>(b) Four seaters occupied = <math>122 - 90</math> = <math>32 \div 4</math> = <b>8</b></p> <p>(c) Tables = <math>4 + 6</math> = 10 Total guests = 60 Tables = <math>60 \div 10</math> = 6</p> <p><b>6 -- 4 seaters</b> <b>6 - 6 seaters</b> (<math>24 + 36 = 60</math>)</p>	
<b>End of Test 20</b>			