FAS-PASS
Maths

NATIONAL TEST 2015
MATHEMATICS – STANDARD III

No.	TEST ITEMS	WORKING COLUMN	*Do Not Write Here*
1.	Write the value of the underlined digit. 4 <u>7</u> 0 6 **Answer:** 700	<table><tr><th>*Thousands*</th><th>*Hundreds*</th><th>*Tens*</th><th>*Ones*</th></tr><tr><td>4</td><td>7</td><td>0</td><td>6</td></tr></table> $7 \times 100 = 700$	
2.	Nadia and Harry played a video game. Their scores are shown below.  Complete the statement below using **less than** or **more than**. Nadia scored _____ Harry. **Answer:** Nadia scored **less than** Harry.	<table><tr><th>*Thousands*</th><th>*Hundreds*</th><th>*Tens*</th><th>*Ones*</th></tr><tr><td>9</td><td>7</td><td>6</td><td>8</td></tr><tr><td>9</td><td>8</td><td>7</td><td>5</td></tr></table> There are 7 Thousands in 9**7**68 There are 8 Thousands in 9**8**75. Since 7 is less than 8 9**7**68 is less than 9**8**75. Nadia's score of 9768 is less than Harry's score of 9875.	
3.	Round 863 to the nearest **ten**. **Answer:** 860	<table><tr><th>*Hundreds*</th><th>*Tens*</th><th>*Ones*</th></tr><tr><td>8</td><td>6</td><td>3</td></tr></table> Our decision to round up or down depends on the value of the digit to the immediate right of the tens digit which is the ones digit. If this digit is 5 or more, we round up and if it is less than 5 we round down. Three is less than 5, so we round down to 860.	

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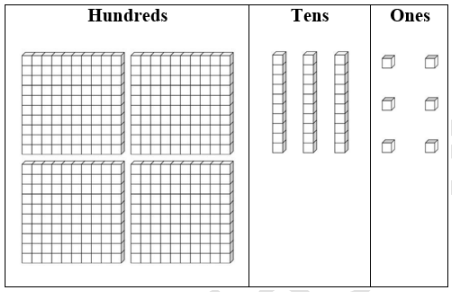
4.	What is the missing number in the sentence below? $100 - \square = 85$ **Answer:** 15	Since we are subtracting a number from 100 to get a result of 85, the number to be subtracted must be a multiple of 5. Counting backwards in multiples of 5, we have: 100, 95, 90, 85 -5 -5 -5 We subtracted 5 three times. So, the missing number is 15.	
5.	The diagram below represents a number.  **a)** Use the diagram to fill in the statement below. $\square$ hundreds + $\square$ tens + $\square$ ones **Answer:** 4 hundreds + 3 tens + 6 ones **b)** Write the number represented in the diagram above. **Answer:** 436 or four hundred and thirty-six	There are 4 Hundred Blocks: $4 \times 100 = 400$ 3 Ten Blocks: $3 \times 10 = 30$ 6 Ones: $6 \times 1 = 6$ Total: $= 436$	

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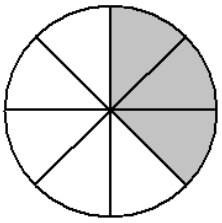
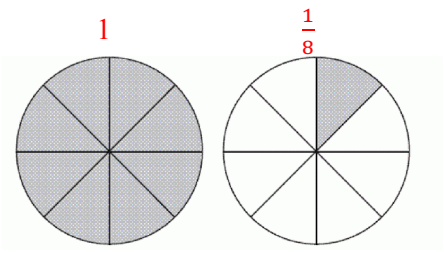
6.	Write the missing number to complete the pattern below. 32, _____, 8, 4, 2, 1 **Answer:** 16	The numbers are decreasing by dividing by 2. $32 \xrightarrow[\div 2]{} \_\_\_ \xrightarrow[\div 2]{} 8 \xrightarrow[\div 2]{} 4 \xrightarrow[\div 2]{} 2 \xrightarrow[\div 2]{} 1$ $32 \div 2 = 16$	
7.	**a)** The shape below represents ONE whole. It is divided into equal parts.  What fraction of the shape is shaded? **Answer:** $\frac{3}{8}$ **b)** Write $1\frac{1}{8}$ as an improper fraction. **Answer:** $\frac{9}{8}$	a) The shape has 8 equal parts. 3 parts are shaded. The shaded fraction is three eighths or $\frac{3}{8}$. b) $1\frac{1}{8} = 1 + \frac{1}{8}$ $= \frac{8}{8} + \frac{1}{8}$ $= \frac{8+1}{9}$ $= \frac{9}{8}$ ***Alternatively:*** $1\frac{1}{8}$ is shown below  $\frac{8}{8} + \frac{1}{8} = \frac{9}{8}$	

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8.	**a)** A school has 14 classes. Each class has 20 students. How many students attend the school? **Answer:** 280 **b)** A supermarket donates 400 bottles of water to the school. Each child is given one bottle of water. How many bottles of water were left? **Answer:** 120	a) Number of students in 1 class = 20 students Number of students in 14 classes $= 20 \times 14$ $= 2 \times 10 \times 14$ $= 2 \times 140$ $= 280$ b) Each student is given 1 bottle of water. There are 280 students in the school, so 280 bottles of water are given out. Number of bottles remaining $= 400 - 280$ H T O 3 10 ~~4~~ 0 0 − 2 8 0 1 2 0	
9.	Sherry has 510 game cards. Her brother gives her 330 game cards. **a)** How many game cards does Sherry have altogether? **Answer:** 840 **b)** Sherry shares **all** her game cards equally among her 4 friends. How many game cards does each friend receive? **Answer:** 210	a) No. of game cards Sherry has altogether $= 510 + 330$ H T O 5 1 0 + 3 3 0 8 4 0 b) No. of game cards each friend receives $= 840 \div 4$ $4\overline{)840}$ 210	

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10.	Chin has a bag of plums which he shared with his friends. He gave $\frac{2}{5}$ of his plums to Rajesh and $\frac{3}{10}$ to Tracy. **a)** What fraction of Chin's plums was given to his friends? **Answer:** $\frac{7}{10}$ **b)** What fraction of the plums did Chin keep for himself? **Answer:** $\frac{3}{10}$	a) Fraction given to friends; $\frac{2}{5}+\frac{3}{10}=\frac{4}{10}+\frac{3}{10}$ $=\frac{7}{10}$ $\times 2$ $\frac{2}{5}=\frac{4}{10}$ $\times 2$ b) 1 whole $=\frac{10}{10}$ Fraction remaining $1-\frac{7}{10}=\frac{10}{10}-\frac{7}{10}$ $=\frac{10-7}{10}$ $=\frac{3}{10}$	
11.	Tick (✓) the most suitable unit used to measure the amount of liquid in a spoon. ☐ litre (l) ☐ centimetre (cm) ☐ millilitre (ml) **Answer:** ☑ millilitre (ml)	The centimetre is not a measure of volume, but is a measure of length. Litres and millitres are measures of volume of a liquid (capacity) One litre of liquid can fill about 6 glasses 1 tablespoon holds 5 ml of a liquid. Hence, millilitres (ml) are more suitable than litres.	

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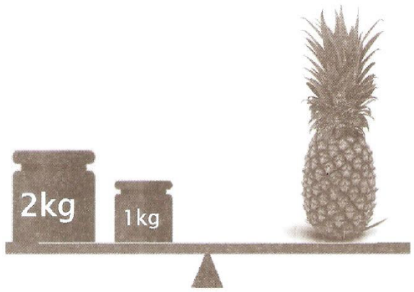
12.	What is 3 metres and 40 centimetres, expressed in centimetres? **Answer:** 340 centimetres	$1\text{ m} = 100\text{ cm}$ $3\text{ m} = 3 \times 100\text{ cm}$ $= 300\text{ cm}$ 3 metres and 40 centimetres $= (300 + 40)$ centimetres = 340 centimetres	
13.	A pineapple is weighed using the balance shown below.  What is the mass of 10 identical pineapples? **Answer:** 30 kg	1 pineapple weighs $2 + 1 = 3\text{kg}$ The mass of 10 such pineapples $= 3\text{ kg} \times 10$ $= 30\text{ kg}$	

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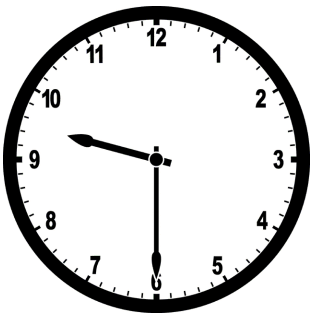
14.	A walk-a-thon was held at a school **one morning**. It started at the time shown below.  **a)** Write the time the event started in digital form. **Answer:** 9:30 **b)** Kim finished the walk-a-thon at 11:45 a.m. How long did she take to complete the walk-a-thon? **Answer:** 2 hours 15 minutes	a) The time is half past nine which is 30 minutes after 9. In digital form, this is written as 9:30. b) Final time 11 : 45 Start time − 9 : 30 2 : 15 OR Kim started at 9:30 and finished at 11:45. Time taken From 9:30 to 10:30 = 1 hour From 10:30 to 11:30 = 1 hour From 11:30 to 11:45 = 15 minutes Total time = 2 hours 15 minutes	

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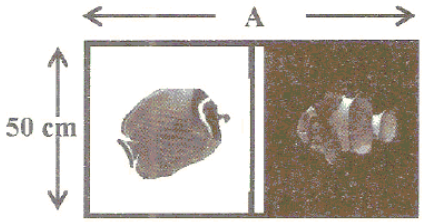
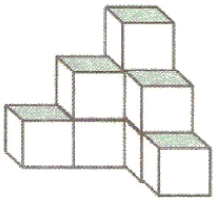
15.	A picture is made up of two identical squares. Each side of the squares measures 50 cm.  **a)** What is the length of the side A? **Answer:** 100 cm **b)** Calculate the perimeter of the picture. **Answer:** 300 cm	a) Side A has a length equal to twice the length of one square. Length of Side A $= 50 \text{ cm} \times 2$ $= 100 \text{ cm}$ b) Perimeter of picture The picture has the shape of a rectangle of length 100 cm and width 50 cm. Perimeter of rectangle = Length+Width+Length+Width $= (100+50+100+50) \text{ cm}$ $= 300 \text{ cm}$	
16.	Janice bought some cubes and stacked them as shown below.  **a)** How many cubes did Janice buy? **Answer:** 9 cubes **b)** Janice bought the cubes for \$360 and sold them for \$450. What was her profit? **Answer:** \$90	a) There are 3 layers as follows: Top layer 1 cube Middle layer 3 cubes (1 hidden) Bottom Layer 5 cubes (1 hidden) Total number of cubes = 1+3+5= 9 b) Profit = Selling Price – Cost Price = \$450 – \$360 = \$90 H T O 3 15 ~~4~~ ~~5~~ 0 − 3 6 0 9 0	

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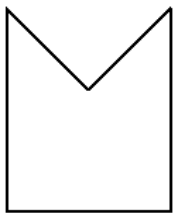
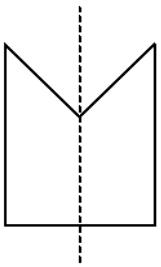
17.	Ed's car park charges \$9.00 per hour for parking. **a)** Mark packed his car in the car park for 45 hours. How much did it cost Mark to park his car? **Answer:** \$405 **b)** Paula paid \$225 for parking at Ed's car park. How many hours did she pay for? **Answer:** 25 hours	a) Cost of parking for 1 hour = \$9 Cost of parking for 45 hours $= \$9 \times 45$ We can multiply by 45 in the following manner: $9(40 + 5)$ $= (9 \times 40) + (9 \times 5)$ $= 360 + 45$ $= 405$ OR We may choose to multiply 45 by 9 using the following method $45 \times 9 = 45(4 + 4 + 1)$ $= (45 \times 4) + (45 \times 4) + (45 \times 1)$ $= 180 + 180 + 45$ $= 360 + 45$ $= 405$ b) Paula's cost for parking $= \$225$ Cost for each hour = \$9 No. of hours she paid for $= \$225 \div \$9 = \$25$ H T O 9 | 2 $^{2}2$ $^{4}5$ 2 5	
18.	How many lines of symmetry does the shape below have?  **Answer:** 1	 1 line of symmetry as shown by the dotted line.	

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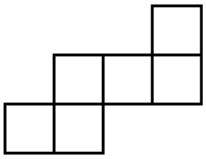
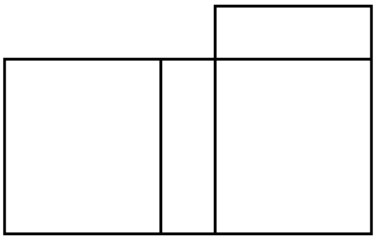
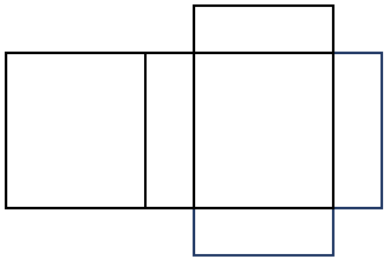
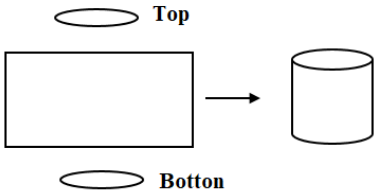
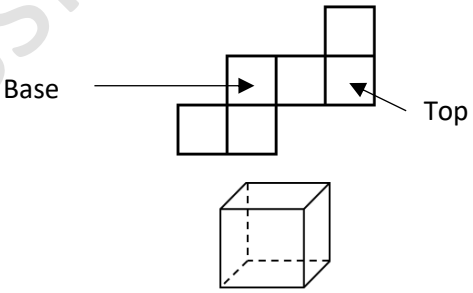
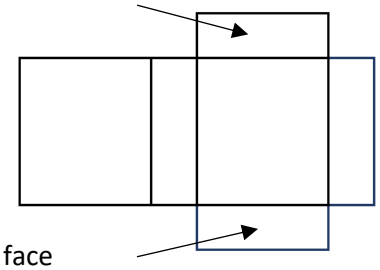
19.	**a)** Name the solid that can be formed from the following plane shapes.  **Answer:** A closed cylinder **b)** Name the solid that can be formed from the net below.  **Answer:** A cube **c)** Complete the diagram to show the net of a cuboid.  **Answer:** 	a) The rectangular shape can be rolled to from the curved surface of a cylinder. The two circles will form the top and bottom surfaces.  The solid formed is a cylinder b) This is one of the nets of a cube.  c) The net of a cuboid has 6 faces made up of 3 pairs. One face is missing and would be identical to the face shown. This face needs one like it 	

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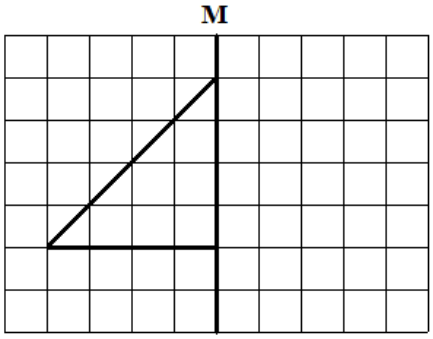
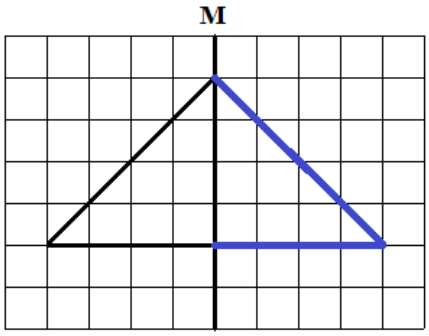
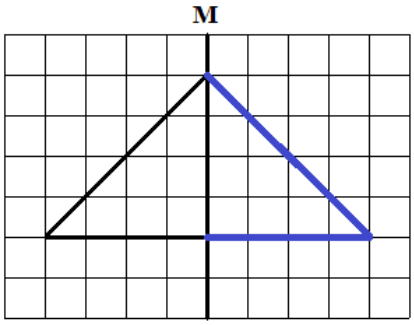
20.	A triangle is drawn on the grid of unit squares below. The triangle is flipped about the line M.  Draw the image of the triangle on the grid above. **Answer:**  	 	

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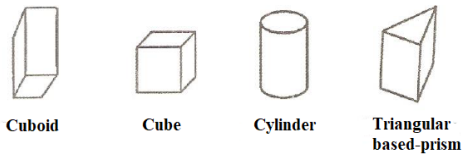
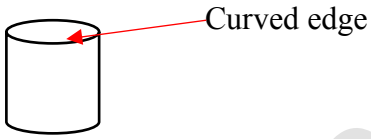
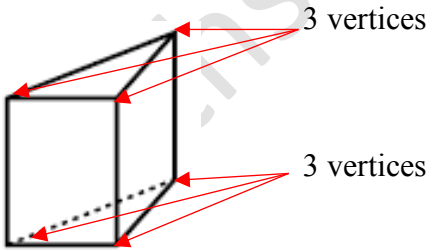
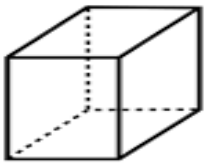
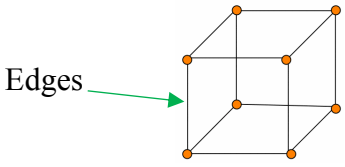
21.	Four solids labelled A, B, C and D are shown below.  Cuboid Cube Cylinder Triangular based-prism **a)** Which of the solids has curved edges? **Answer:** Only the cylinder **b)** Which solid has six vertices? **Answer:** The triangular-based prism **c)** Which solid has rectangular faces only? **Answer:** The cuboid **d)** Jared made the frame of a solid using plasticine and straws. He used 12 straws of the same length for the edges. Which solid does the frame represent? **Answer:** Cube	a) The cylinder has curved edges  b) The triangular based prism has 6 vertices, 3 on top and 3 at the bottom.  c) The solid with rectangular faces only is the cuboid.  (Note that some cuboids can have two faces that are squares) d) Jared made the frame of a cube because all the edges are the same length and there are 12 edges in all- 4 vertical and 8 horizontal.  	

<table>
<tr><th>No.</th><th>TEST ITEMS</th><th>WORKING COLUMN</th><th>Do Not Write Here</th></tr>
<tr><td>22.</td><td>A football team scored the following number of goals in different matches.

2, 5, 3, 1, 3, 4, 2, 1, 3, 3

What is the mode?

Answer: 3</td><td>
<table>
<tr><th>Goals</th><th>Number of occurrences</th></tr>
<tr><td>1</td><td>2</td></tr>
<tr><td>2</td><td>2</td></tr>
<tr><td>3</td><td>4</td></tr>
<tr><td>4</td><td>1</td></tr>
</table>

The mode is the score that occurred most. The score of 3 occurred the most times (4 times) and no other score had a higher number of occurrences.
The mode is therefore 3.</td><td></td></tr>
<tr><td></td><td></td><td></td><td></td></tr>
</table>

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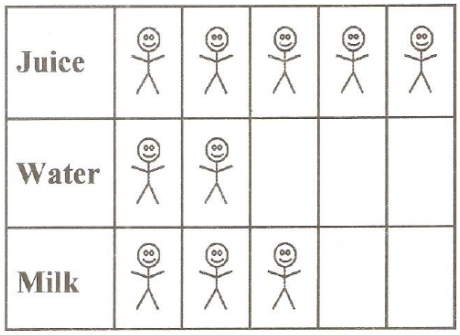
23.	The table below shows the number of plants sold by four students at a Plant Sale. **Name of Student** / **Tally** / **No. of Plants Sold** Ingrid / 𝍸 𝍸 𝍸 | / 16 John / 𝍸 |||| / 9 Maia / / 7 Arvind / 𝍸 𝍸 ||| / 13 **a)** Complete the table. **Answer:** **Name of Student** / **Tally** / **No. of Plants Sold** Ingrid / 𝍸 𝍸 𝍸 | / 16 John / 𝍸 |||| / 9 Maia / 𝍸 || / 7 Arvind / 𝍸 𝍸 ||| / 13 **b)** Which two students together sold more than half the number of plants? **Answer:** Ingrid and Arvind **OR** Ingrid and John	a) To complete the table, we need to insert Maia's tally which is 7 or 5+2 = 𝍸 || b) Total no. of plants sold $=16+9+7+13$ $=45$ $\frac{1}{2}$ this number is $22\frac{1}{2}$, but we round up to 23 since we cannot have a half of a plant. So, we are looking for two student totals that are greater than 23. Since Ingrid sold the most plants we can start with her as one in the pair. Ingrid and Arvind together sold = 16 + 13 = 29 plants. (more than 23) Ingrid and John together sold = 16 + 9 = 25 plants. (more than 23) Ingrid and Maria sold = 16 + 7 = 23 plants. (not more than 23) We can also consider Arvind and John who sold 13+9 = 22 plants. (not more than 23) We conclude that the totals 29 and 25 exceeds 23. Hence, Ingrid and Arvind **OR** Ingrid and John together sold more than half the number of plants.	

No.	TEST ITEMS	WORKING COLUMN	*Do Not Write Here*
24	Students in a Standard 1 class and a Standard 2 class participated in a survey in a school. The pictograph below shows their favourite drinks. **Our Favourite Drink**  **a)** How many more students preferred juice than milk? **Answer:** 10 **b)** If there are 20 students in Standard 1, how many students are in Standard 2? **Answer:** 30	a) 1 picture represents 5 students. No. of students who chose juice $= 5 \times 5$ $= 25$ No. of students who chose milk $= 3 \times 5$ $= 15$ Therefore, the number choosing juice is more than the number choosing milk by 25–10 = 15 15 more students preferred juice than milk. b) 1 picture represents 5 students. Total number of pictures = 10 Total no. of students in both classes $= 5 \times 10$ $= 50$ Number of Standard1 students = 20 Number of Standard 2 students = Total Number of students – Number of Standard 1 students = (50 – 20) students = 30 students	

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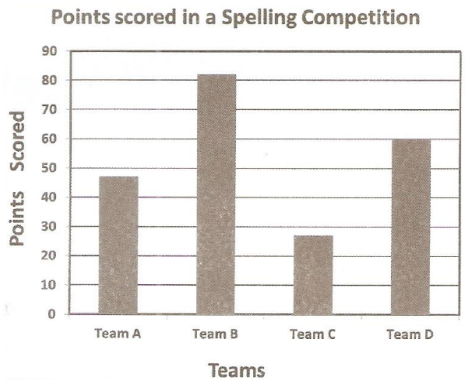
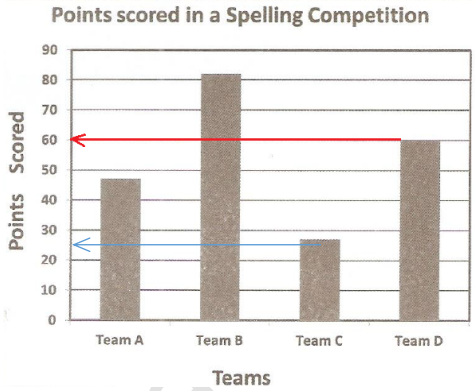
25.	The bar graph below shows the points scored by four teams in a Spelling competition.  **a)** How many points did Team D score? **Answer:** 60 **b)** Which team scored approximately 20 more points than Team C? **Answer:** Team A **c)** If Team D came second in the competition, which team placed third? **Answer:** Team A	a) The bar for Team D has a height of 60.  Team D scored 60 points. a) The bar for Team C has a height of 25. Team C scored 25 points. 20 more than 25 will be 45. $\begin{array}{r} 25 \\ +\ 20 \\ \hline 45 \end{array}$ 45 was scored by Team A. b) | Team	Score
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A	45
B	80
C	25
D	60	 So, Team B is first, Team D is second, Team A is third and Team C is fourth.	