

MARK SCHEME	نموذج الإجابة وتوزيع الدرجات
KINGDOM OF BAHRAIN	مملكة البحرين
EDUCATION & TRAINING QUALITY AUTHORITY	هيئة جودة التعليم والتدريب
Grade 12 National Examinations	الامتحانات الوطنية للصف الثاني عشر
Mathematical Skills 2026	امتحان المهارات الرياضية ٢٠٢٦

This mark scheme is published as an aid to teachers and students, to indicate the requirements of the National Examinations. It shows the basis for awarding marks.

Mark schemes must be read in conjunction with the question papers and Marking reports.

1	Answer	B	$12 + 8.5 + 6.5 = \text{BD } 27$ This group cannot be bought
	Wrong Answers		
	A		$3 + 10 + 12 = \text{BD } 25$ This group can be bought
	C		$3 + 7 + 5.5 + 8.5 = \text{BD } 24$ This group can be bought
	D		$4 + 5.5 + 8.5 + 6.5 = \text{BD } 24.5$ This group can be bought
2	Answer	D	The number of cars of the two new models sold in the first quarter in both regions: $90 + 108 + 95 + 120 = 413$ The number of cars of the two new models sold in the second quarter in both regions: $80 + 115 + 100 + 70 = 365$ The number of cars of the two models sold in the third quarter in both regions: $110 + 100 + 123 + 77 = 410$ The number of cars of the two models sold in the fourth quarter in both regions: $122 + 94 + 105 + 99 = 420$ So, the highest number of sold cars of the two models was in quarter 4
	Wrong answers		
	A		See above
	B		See above
	C		See above
3	Answer	C	Orange crop is bigger than banana crop Grape crop is bigger than orange crop Strawberry crop is bigger than grape crop Apple crop is bigger than strawberry crop
	Wrong answers		
	A		Banana crop is bigger than orange crop
	B		Orange crop is bigger than strawberry and grape crops
	D		Grape crop is bigger than strawberry crop

4	Answer	C	Laila got a discount of (BD 1) on the small size Chicken Shawerma dish and (BD 1.8) on the Chicken Tikka Shawerma dish, and the total amount paid by Laila to the restaurant for what she bought is BD 7.320 ($1.000 \times 0.9 + 2.400 \times 2 + 1.8 \times 0.9$)
	Wrong Answers		
	A	Counting a 90% discount on chicken dishes.	
	B	Counting a discount on all dishes.	
	D	Did not count the discount.	
5	Answer	D	Calculating the total revenue for the year 2021 ($605 \times 1.1 = 665.5$) Calculating the total revenue for the year 2022 ($665.5 \times 1.1 = 732.05$)
	Wrong Answers		
	A	Calculating the revenue for the year 2022 only ($665.5 \times 0.1 = 66.55$)	
	B	Calculating the revenue for the years 2021 and 2022 Revenue for the year 2021 only ($605 \times 0.1 = 60.5$) Revenue for the year 2022 only ($665.5 \times 0.1 = 66.55$) Thus, the total is ($60.5 + 66.55 = 127.05$)	
	C	Calculating the total revenue for the year 2021 ($605 \times 1.1 = 665.5$)	
6	Answer	A	The numbers replacing the letters in the word (BAHRAIN) are: B=02, A=01, H=08, R=18, A=01, I=09, N=14 BAHRAIN = 02010818010914
	Wrong Answers		
	B	Writing the code of the letters A, B, H, I using a one-digit number.	
	C	Writing the code of the letter B using a one-digit code.	
	D	The numbers representing the letters N, R are switched.	
7	Answer	B	Faisal purchased 4 air conditioners. So, he will be exempted from the VAT on air conditioners, and therefore, the price of each air conditioner will be BD 250 ($275 \div 1.1$). The total amount paid by Faisal for his purchase is BD 1143 ($143 + 250 \times 4$)
	Wrong answers		
	A	Faisal will be exempted from VAT on all the items he purchased.	
	C	Faisal will be exempted from VAT on the TV instead of the air conditioners.	
	D	Faisal was not be exempted from VAT on the air conditioners.	

8	Answer	A	The graph matches the data in the table, where the columns are arranged from shortest to longest as follows: 5, 2, 1, 6, 3, 7, 4																																							
	Wrong answers																																									
	B	Column number 5 is not the shortest.																																								
	C	Column number 1 is the same height as column number 7.																																								
	D	Column number 3 is shorter than column number 6.																																								
9	Answer	C	With experimental research, the following table can be obtained:																																							
			<table><tr><th>Quantity for Suit1</th><th>Price After Discount (BD)</th><th>Quantity for Suit2</th><th>Price After Discount (BD)</th><th>Total Price (BD)</th></tr><tr><td>5</td><td>80</td><td>0</td><td>0</td><td>80</td></tr><tr><td>4</td><td>70</td><td>1</td><td>25</td><td>95</td></tr><tr><td>3</td><td>50</td><td>2</td><td>50</td><td>100</td></tr><tr><td>2</td><td>40</td><td>3</td><td>50</td><td>90</td></tr><tr><td>1</td><td>20</td><td>4</td><td>75</td><td>95</td></tr><tr><td>0</td><td>0</td><td>5</td><td>75</td><td>75</td></tr></table>					Quantity for Suit1	Price After Discount (BD)	Quantity for Suit2	Price After Discount (BD)	Total Price (BD)	5	80	0	0	80	4	70	1	25	95	3	50	2	50	100	2	40	3	50	90	1	20	4	75	95	0	0	5	75	75
			Quantity for Suit1	Price After Discount (BD)	Quantity for Suit2	Price After Discount (BD)	Total Price (BD)																																			
			5	80	0	0	80																																			
			4	70	1	25	95																																			
			3	50	2	50	100																																			
			2	40	3	50	90																																			
			1	20	4	75	95																																			
	0	0	5	75	75																																					
	It is clear from the table that the lowest price, according to the mentioned condition, is BD 90, which is achieved when buying two suits of the first type and three suits of the second type.																																									
Wrong Answers																																										
A	Buy all suits of type 2																																									
B	Buy all suits of type 1																																									
D	Buy three suits of type 1 and two suits of type 2, but it's not the least																																									
10	Answer	D	Moein is 50 years old, Osama is 47 years old, Anwar is 28 years old, Ala'a is 55 years old.																																							
	Wrong Answers																																									
	A	Anwar's age.																																								
	B	Osama's age.																																								
	C	Moein's age.																																								

11	Answer	C	By examining the number of sold bags of each type, we found the following options:																								
			<table><tr><th>No. of first type bags</th><th>No. of second type bags</th><th>Total revenue</th></tr><tr><td>1</td><td>10</td><td>46</td></tr><tr><td>2</td><td>9</td><td>48</td></tr><tr><td>3</td><td>7</td><td>46</td></tr><tr><td>4</td><td>6</td><td>48</td></tr><tr><td>5</td><td>4</td><td>46</td></tr><tr><td>6</td><td>3</td><td>48</td></tr><tr><td>7</td><td>1</td><td>46</td></tr></table>	No. of first type bags	No. of second type bags	Total revenue	1	10	46	2	9	48	3	7	46	4	6	48	5	4	46	6	3	48	7	1	46
No. of first type bags			No. of second type bags	Total revenue																							
1			10	46																							
2			9	48																							
3			7	46																							
4			6	48																							
5			4	46																							
6			3	48																							
7			1	46																							
	So, the number of bags of both types sold for BD 46 is: 11 bags (1 bag of the first type and 10 bags of the second type) 10 bags (3 bags of the first type and 7 bags of the second type) 9 bags (5 bags of the first type and 4 bags of the second type) 8 bags (7 bags of the first type and one bag of the second type) The highest number of sold bags is 11, but it did not meet the condition of selling at least two bags of the first type. Therefore, the highest number of sold bags is 10 bags.																										
Wrong Answers																											
A	See above																										
B	See above																										
D	See above																										

12	Answer	A	The table below shows the number of failing students from each class along with their percentages.																					
			<table><tr><th>Grade</th><th>Number of failing students</th><th>The ratio of failing students in each class to the total number of failing students in the school</th></tr><tr><td>One</td><td>35</td><td>26%</td></tr><tr><td>Two</td><td>15</td><td>11%</td></tr><tr><td>Three</td><td>35</td><td>26%</td></tr><tr><td>Four</td><td>15</td><td>11%</td></tr><tr><td>Five</td><td>15</td><td>11%</td></tr><tr><td>Six</td><td>20</td><td>15%</td></tr></table>	Grade	Number of failing students	The ratio of failing students in each class to the total number of failing students in the school	One	35	26%	Two	15	11%	Three	35	26%	Four	15	11%	Five	15	11%	Six	20	15%
			Grade	Number of failing students	The ratio of failing students in each class to the total number of failing students in the school																			
			One	35	26%																			
			Two	15	11%																			
			Three	35	26%																			
Four	15	11%																						
Five	15	11%																						
Six	20	15%																						
Wrong answers																								
B	Failure rates compared to students in the same grade and not to failing students in the school																							
C	Passing rates compared to all successful students in the school.																							
D	Considering that the number of failing students represents their percentage																							
13	Answer	A	To ensure the lowest fuel cost for the family's trip to Souq Al-Mubarakiya, the following should be considered: • The minimum distance to be covered is 450 km. • The lowest fuel consumption per 100 km is 12 liters. • The price of 1 liter of fuel is BD 0.150. Accordingly, the total cost will be BD 8.100 ($450 \times 12 \div 100 \times 0.15$).																					
			Wrong answers																					
			B	Minimum fuel consumption per 100 km is 15 liters.																				
			C	Calculate the average for each of the following: • The distance traveled • The amount of fuel consumed per 100 km The price of 1 liter of fuel																				
			D	Calculate the maximum for each of the following: • The distance traveled • The amount of fuel consumed per 100 km The price of 1 liter of fuel																				

14	Answer	C	The different numbers that sum up to 6 are (0,6), (1,5), and (2,4). The different numbers whose product is 6 are (1,6) and (2,3). Therefore, we find 12 different passwords that meet Mohammed's conditions, and they are: 0623, 0632, 6023, 6032, 1523, 1532, 5123, 5132, 2416, 2461, 4216, 4261.
	Wrong answers		
	A	Forgetting to switch between all numbers	
	B	Forgetting to switch in the first and second numbers or the third and fourth numbers	
	D	Calculating secret numbers that contain duplicates	
15	Answer	B	3 workers make 2 chairs in 3 hours 3 workers make 4 chairs in 6 hours 6 workers make 8 chairs in 6 hours 9 workers make 12 chairs in 6 hours
	Wrong answers		
	A	Considering twice the number of workers, but it is not enough to make 12 chairs.	
	C	Considered each worker makes one chair in 6 hours.	
	D	3 workers make 2 chairs 18 workers make 12 chairs (the time factor is not considered)	
16	Answer	C	The graph matches the data.
	Wrong answers		
	A	The first column is too high, the third column is too low, and the fourth column is too high.	
	B	The second column is too high and the third column is too low.	
	D	The third column is too low and the fourth column is too high.	

17	Answer	C	The 1990s span 10 years, from 1990 to 1999. Looking into the possible academic numbers, we find that:																																	
			<table><tr><th>Year</th><th>Sequence</th><th>Academic Number</th></tr><tr><td>1990</td><td>0995</td><td>19900995</td></tr><tr><td>1991</td><td>0995.5</td><td>19910995.5</td></tr><tr><td>1992</td><td>0996</td><td>19920996</td></tr><tr><td>1993</td><td>0996.5</td><td>19930996.5</td></tr><tr><td>1994</td><td>0997</td><td>19940997</td></tr><tr><td>1995</td><td>0997.5</td><td>19950997.5</td></tr><tr><td>1996</td><td>0998</td><td>19960998</td></tr><tr><td>1997</td><td>0998.5</td><td>19970998.5</td></tr><tr><td>1998</td><td>0999</td><td>19980999</td></tr><tr><td>1999</td><td>0999.5</td><td>19990999.5</td></tr></table>	Year	Sequence	Academic Number	1990	0995	19900995	1991	0995.5	19910995.5	1992	0996	19920996	1993	0996.5	19930996.5	1994	0997	19940997	1995	0997.5	19950997.5	1996	0998	19960998	1997	0998.5	19970998.5	1998	0999	19980999	1999	0999.5	19990999.5
			Year	Sequence	Academic Number																															
			1990	0995	19900995																															
			1991	0995.5	19910995.5																															
			1992	0996	19920996																															
			1993	0996.5	19930996.5																															
			1994	0997	19940997																															
			1995	0997.5	19950997.5																															
			1996	0998	19960998																															
			1997	0998.5	19970998.5																															
			1998	0999	19980999																															
1999	0999.5	19990999.5																																		
Five academic numbers are not possible as they contain 0.5, and a student's sequence cannot be 0.5. There remain five possible academic numbers.																																				
Wrong answers																																				
A	Considering only the year 1990 as the nineties																																			
B	Excluding the year 1990 from the nineties																																			
D	Calculating all the nineties years																																			
18	Answer	C	Assuming that Hamed prepared 6 meals of the first type in three hours (2 meals per hour) for BD 36, and in the remaining two hours he prepared 8 meals of the second type (4 meals per hour) for BD 32. When calculating the total price of meals, we found that it is BD 68, and this is 2 dinars over the total price Hamed got for selling the meals. Here, the number of meals of the second type must be decreased by two meals (half an hour) so that their number will be 6 meals, and the number of meals of the first type must be increased by one meal to become 7 meals, in order to get the total selling amount of all the meals BD 66. (7 × 6 + 6 × 4).																																	
			Wrong Answers																																	
			A	Considering that Hamed sold one meal of the first type and 15 meals of the second type, but the time taken to prepare these quantities of the two types is four and a quarter hours, which is less than the hours Hamed worked.																																
			B	This is the number of meals of the second type sold by Hamed.																																
			D	This is the total number of meals of both types.																																

19	Answer	D	The number of children in 2016: Hasan has 3 children, Ali has 3, Omar has 4, Hamza has 6, Ammar has 8. The total number of children will be 24. Therefore, the chart is correct because: Hasan and Ammar segments ($3 + 8 = 11$) are less than the half (12) Hasan and Ali's segments ($3 + 3 = 6$) represents the quarter. Hamza segment is smaller than Ammar segment and larger than the Omar segment.
			Wrong answers
			A The chart shows the number of children in 2015.
			B One child is not counted for each of Hasan and Ali.
			C The twins were not counted for Hamza.
20	Answer	A	Assuming that S is the number of balls in the bag, B is the number of blue balls, R is the number of red balls, Y is the number of yellow balls. According to the given information: $S = Y + 8$ $S = R + 12$ $S = B + 10$ After solving the three equations and finding the value of S, which is 15, make substitution in the last equation and find the value of B, which is 5
			Wrong answers
			B Misunderstood the given information and considered the number of non-blue balls to be blue.
			C Founded the number of balls in the bag.
			D Added the non-yellow balls and non-red balls without subtracting their total so that only the blue balls are left.

21	Answer	C	Count the contestant's total points as following: Total points = the number of correct answers – the number of wrong answers + the number of extra points the contestant gets when answering three consecutive questions correctly – the number of extra points the contestant loses when answering three consecutive questions incorrectly. The four cases of Mariam's answer on the eighth and twelfth questions and the calculation of the total points are as below: • The eighth (T) and the twelfth (T): Mariam gets a total of 8 points ($10 - 5 + 3$) • The eighth (T) and the twelfth (F): Mariam gets a total of 4 points ($9 - 6 + 2$) • The eighth (F) and the twelfth (T): Mariam gets a total of 5 points ($9 - 6 + 2$) • The eighth (F) and the twelfth (F): Mariam gets a total of 1 point ($8 - 7$) Since Mariam got a total of 5 points, then her answer on the eighth question was incorrect, and on the twelfth question is correct.
			Wrong answers
			A See above
			B See above
			D See above

22	Answer	A	The number of blue cards according to each case:		
			Case	Number	Number of cards and explanation
			1	x27 or x72	4
			2	2x7	9 because 227 is counted in the previous case
			3	27x	8 because 272 is counted in case 1, and 277 is counted in case 2
			4	7x2 or 72x	0 because the highest possible number is 300
	Wrong Answers				
	B	Counted the repetitions in case 2.			
	C	Counted the repetitions in case 3.			
	D	Counted all the repetitions.			
23	Answer	D	To ensure each grandchild get the allocated amount, Grandpa Faisal should provide the maximum limit of each category. He will allocate BD 2 for each of the little grandchildren, BD 5 for each of the three 8-year-old grandchildren, BD 20 for each of his grandchildren who are over 10 years old but not over 15 years old, and will not give money to his grandchildren who are over 15 years old.		
			10 × 2 + 3 × 5 + 3 × 20 + 5 × 0 = BD 95		
			Wrong Answers		
	A	Did not count BD 20 for the remaining 3 grandchildren.			
	B	Provided the minimum limit of each grandchildren's category 10 × 1 + 5 × 0 + 3 × 3 + 3 × 10 = BD 49			
	C	Counted the average amount of each category. 10 × 1.5 + 3 × 4 + 3 × 15 + 5 × 0 = BD 72			

24

Answer	C	The total number of points collected by Nassers’s friend in the second round is 6 points as following:																				
		Spots	A	B	C	D	E	F	G	Points	-2	5	7	-7	-5	5	3					
		Spots	A	B	C	D	E	F	G													
Points	-2	5	7	-7	-5	5	3															
In addition to the 8 points he collected in the first round, the total number of points in the two rounds is 14.																						
Wrong answers																						
A	The points collected by Nassers’s friend in the second round.																					
B	Considering losing in the three spots as following:																					
	Spots	A	B	C	D	E	F	G	Points	-3	5	7	-10	-7	5	3						
	Spots	A	B	C	D	E	F	G														
Points	-3	5	7	-10	-7	5	3															
With a total of 0 points, in addition to the 8 points collected in the first round, the total number of points in the two rounds is 8.																						
D	Considering when a goal is not scored, points are collected:																					
	Spots	A	B	C	D	E	F	G	Points	2	5	7	7	5	5	3						
	Spots	A	B	C	D	E	F	G														
Points	2	5	7	7	5	5	3															
With a total of 34 points, in addition to the 8 points collected in the first round, the total number of points in the two rounds is 42.																						

25	Answer	B	By finding the time taken to travel the distance added to the delay time, we get the below table:																									
			<table><tr><th>Route</th><th>Distance travelled (km)</th><th>Average speed (km/h)</th><th>Delay time (min)</th><th>Required time of arrival (min)</th></tr><tr><td>First</td><td>27</td><td>80</td><td>8</td><td>28.25</td></tr><tr><td>Second</td><td>30</td><td>100</td><td>4</td><td>22</td></tr><tr><td>Third</td><td>40</td><td>120</td><td>7</td><td>27</td></tr><tr><td>Fourth</td><td>25</td><td>100</td><td>9</td><td>24</td></tr></table>	Route	Distance travelled (km)	Average speed (km/h)	Delay time (min)	Required time of arrival (min)	First	27	80	8	28.25	Second	30	100	4	22	Third	40	120	7	27	Fourth	25	100	9	24
			Route	Distance travelled (km)	Average speed (km/h)	Delay time (min)	Required time of arrival (min)																					
			First	27	80	8	28.25																					
			Second	30	100	4	22																					
			Third	40	120	7	27																					
	Fourth	25	100	9	24																							
	Mahmoud will reach the company building after 22 minutes when choosing second route.																											
Wrong Answers																												
A	See above																											
C	See above																											
D	See above																											
26	Answer	D	In case Zainab was employed in: • The first company: she will receive 3 annual increases, and her salary by March 2009 will be $935 \times (1.0225)^3 = \text{BD } 999.543$ • The second company: she will receive two annual increases, and her salary by March 2009 will be $940 \times (1.03)^2 = \text{BD } 997.246$ • The third company: she will receive 3 annual increases, and her salary by March 2009 will be $963 \times (1.0125)^3 = \text{BD } 999.566$ • The fourth company: her salary by March 2009 will be BD 1000, which is the highest of all the companies by this time.																									
			Wrong Answers																									
			A	See above																								
			B	See above																								
			C	See above																								

27	Answer	C	The yellow team defeated the red team in the third quarter by double the points that the red team defeated the yellow team in the first quarter. In the second and fourth quarter, both teams tied.
	Wrong Answers		
	A	According to the graph, the red team has outperformed the yellow team.	
	B	The two teams are tied.	
	D	According to the graph, the red team has outperformed the yellow team.	
28	Answer	B	Only 4 students meet the admission requirements for engineering colleges: Hussein, Hala, Abdullah, and Hessa
	Wrong Answers		
	A	The number of students who can enroll in the medical college at this university.	
	C	Considering that a student who scores 90% can enroll in engineering colleges.	
	D	The total number of students who can enroll in engineering and medical colleges.	
29	Answer	B	Matches all the data.
	Wrong answers		
	A	The number of male students in the fourth batch is less than half the number of female students.	
	C	The number of male students in the second batch represents one-third of the number of female students.	
	D	The number of male students and the number of female students are switched.	

30	Answer	A	Khaled composed a four-digit passcode for his educational account, all of which are different, and the number is odd and divisible by 7, with a sum of its digits being 30. There are only four different digits whose sum is 30: 9, 8, 7, and 6. Since the number is odd, its units digit must be either 7 or 9. Systematic investigation to find the number that is divisible by 7 reveals the following: <table><tr><th>The number</th><th>Divisibility by 7</th></tr><tr><td>6789</td><td>×</td></tr><tr><td>6879</td><td>×</td></tr><tr><td>6897</td><td>×</td></tr><tr><td>6987</td><td>×</td></tr><tr><td>7689</td><td>×</td></tr><tr><td>7869</td><td>×</td></tr><tr><td>8679</td><td>×</td></tr><tr><td>8697</td><td>×</td></tr><tr><td>8769</td><td>×</td></tr><tr><td>8967</td><td>✓</td></tr><tr><td>9687</td><td>×</td></tr><tr><td>9867</td><td>×</td></tr></table> Therefore, there is only one option that meets all of Khaled's conditions for writing the access code numbers.	The number	Divisibility by 7	6789	×	6879	×	6897	×	6987	×	7689	×	7869	×	8679	×	8697	×	8769	×	8967	✓	9687	×	9867	×
The number			Divisibility by 7																										
6789	×																												
6879	×																												
6897	×																												
6987	×																												
7689	×																												
7869	×																												
8679	×																												
8697	×																												
8769	×																												
8967	✓																												
9687	×																												
9867	×																												
Wrong answers																													
	B	This meets Khaled's conditions for writing the entry code numbers, except that it is an odd number (so it should be an even number, such as 9786 and 7896).																											
	C	This meets two of Khaled's conditions for writing the entry code numbers (the sum of the numbers is 30 and is divisible by 7).																											
	D	This meets two of Khaled's conditions for writing the entry code numbers (the sum of the numbers is 30 and it is an odd number).																											

31	Answer	B	The price of type Z room for 5 nights is BD 161 (BD 112.200 after discount), and the price of type X room for three nights is BD 55, therefore, the difference is BD 57.700. The result of 70% of Type Z for 5 nights – Type X for 3 nights
	Wrong answers		
	A		Calculated 70% of type Z for 5 nights – type X for 5 nights.
	C		Calculated 70% of type Z for 5 nights – 70% of type X for 3 nights.
	D		Calculated type Z for 5 nights – type X for 3 nights, without any discount.
32	Answer	C	The remaining points of the third round are 9, distributed between Ahmad and Muhammad, on an average of 5 points for Muhammad, since he is the only one to get full points in a round, and 4 points for Ahmad. The remaining points of the fourth round are 7, distributed between Jaber and Muhammad on an average of 4 points and 3 points. The remaining points of the first round are 4, distributed between Ahmad and Jaber on an average of 3 points and 1 point, considering that Ahmad did not get even with the friends in any round. Assuming that Muhammad got 3 points in his fourth round, then his total points are 11. Thus, Ahmad's score in his first round must be 3 points so that his total points are higher than Muhammad's. Assuming that Muhammad got 4 points in his fourth round, then his total points are 12. Thus, Ahmad's score in his first round must be 3 points so that his total points are higher than Muhammad's. Therefore, the number of points that Ahmad scored in his first round is 3.
	Wrong Answers		
	A		See above
	B		See above
	D		See above

33			According to the points calculation model in the three stages of the competition, the participating high school has scored the following points, as shown in the table below:															
Answer	A		<table><tr><th>Stage</th><th>Number of correct answers</th><th>Points awarded</th></tr><tr><td>First</td><td>4</td><td>$4 \times 8 = 32$</td></tr><tr><td>Second</td><td>3</td><td>$3 \times 12 - 4 \times 1 = 32$</td></tr><tr><td>Third</td><td>0</td><td>$64 \div 2 = 32$ $32 \div 2 = 16$</td></tr><tr><td colspan="2">The final result</td><td>16</td></tr></table>	Stage	Number of correct answers	Points awarded	First	4	$4 \times 8 = 32$	Second	3	$3 \times 12 - 4 \times 1 = 32$	Third	0	$64 \div 2 = 32$ $32 \div 2 = 16$	The final result		16
		Stage	Number of correct answers	Points awarded														
		First	4	$4 \times 8 = 32$														
		Second	3	$3 \times 12 - 4 \times 1 = 32$														
		Third	0	$64 \div 2 = 32$ $32 \div 2 = 16$														
		The final result		16														
Thus, the final score obtained by the team is 16 points.																		
Wrong Answers																		
B	Four points were not deducted in the second stage for losing one question.																	
C	Half of the team's total points were not deducted after the second mistake in the third stage.																	
D	Half of the team's total points were not deducted after each mistake in the third stage.																	
34			Wael was able to get a net profit of BD 10700 by selling 5 cars for an average of BD 2140. Based on that, we will start with two full-option cars with a profit of BD 5000, the remaining of profit is BD 5700, which cannot be collected by selling 3 cars of the other two types.															
Answer	A		Assuming that selling 3 full-option cars with a profit of BD 7500, and the remaining of profit is BD 3200, which can be collected by selling two medium-options cars.															
			$[2500 \times (3)] + [1600 \times (2)] + [900 \times (0)] = \text{BD } 10700$															
Wrong answers																		
B	The number of cars sold with full-option feature, instead of cars with medium-options feature.																	
C	Collected profit by selling 7 cars $[2500 \times (1)] + [1600 \times (4)] + [900 \times (2)] = \text{BD } 10700$ The total number of cars sold with medium-options feature is 4.																	
D	Collected profit by selling 8 cars $[2500 \times (0)] + [1600 \times (5)] + [900 \times (3)] = \text{BD } 10700$ The total number of cars sold with medium-options feature is 5.																	

35	Answer	B	The average amount per car is BD 16,666.667. To ensure the purchase of 3 cars with the full amount, the prices of the three cars must be around the average. If the price of one car increases by a certain amount, the other should decrease by the same amount, or the other two should decrease by the total of the same amount, or vice versa. • Since Mohannad bought a type Y car, assuming he bought the low-feature car for BD 14,000, he will not be able to buy two other cars to reach the full amount. • Assuming he bought the mid-feature car for BD 16,000, he could then buy a mid-feature car of type X for BD 15,500 and a high-feature car of type X for BD 18,500. • Assuming he bought the high-feature car for BD 23,000, he will not be able to buy two other cars to reach the full amount.
	Wrong answers		
	A	See above	
	C	Mohannad will buy it, but it is of type X	
	D	See above	
36	Answer	D	In order for Khadija to get the highest possible amount, she should type the simple research for 8 hours and the complex research for 10 hours. The total of typing 10 researches is 180 hours ($8 \times 10 + 10 \times 10$), with 28 hours left, where she can type 3 simple researches, or two complex researches and one simple research. And in order to get the highest amount, she should type two complex researches and one simple, with a total of 11 simple researches and 12 complex researches. And she will receive an amount of BD 870.
	Wrong answers		
	A	Assuming that she will type the simple research in 9 hours and the complex research in 11 hours.	
	B	Assuming that she will type the simple research in 8.5 hours and the complex research in 10.5 hours, counting the average of the working hours.	
	C	Writing 3 additional simple researches in the remaining time.	

37	Answer	B	The cost of Umrah trip in the holy month of Ramadan for Hashem's family according to their request (private room for him and his wife), triple room for the daughters and quadruple room for the two sons with the possibility of adding two other people, with meals is as follows: The first agency's offer: $0.9 (65 \times 2 + 56 \times 3 + 43 \times 2 + 20 \times 7)$ BD 471.600 The second agency's offer: $(60 \times 2 + 55 \times 3 + 50 + 25 + 17 \times 6 + 8.5)$ BD 470.500 The lowest cost that Hashem's family can pay for their trip to perform Umrah is for the second travel agency.
			Wrong answers
		A	Forgetting to add the meals' cost.
		C	Choosing the first agency's offer.
		D	Choosing a double room for the sons with the second agency.

38	Answer	C	The following table shows the tax rate for each product:															
			<table><tr><th>Products</th><th>Price</th><th>Added-value</th></tr><tr><td>1</td><td>BD 1.100</td><td>0.055</td></tr><tr><td>2</td><td>BD 1.200</td><td>0.060</td></tr><tr><td>3</td><td>BD 1.400</td><td>0.070</td></tr><tr><td>4</td><td>BD 1.300</td><td>0.065</td></tr></table>	Products	Price	Added-value	1	BD 1.100	0.055	2	BD 1.200	0.060	3	BD 1.400	0.070	4	BD 1.300	0.065
			Products	Price	Added-value													
			1	BD 1.100	0.055													
			2	BD 1.200	0.060													
			3	BD 1.400	0.070													
			4	BD 1.300	0.065													
			The following table shows the total tax for two products in all the cases:															
			<table><tr><th>Products Numbers</th><th>Total Tax</th></tr><tr><td>1+2</td><td>0.115</td></tr><tr><td>1+3</td><td>0.125</td></tr><tr><td>1+4</td><td>0.120</td></tr><tr><td>2+3</td><td>0.130</td></tr><tr><td>2+4</td><td>0.125</td></tr><tr><td>3+4</td><td>0.135</td></tr></table>	Products Numbers	Total Tax	1+2	0.115	1+3	0.125	1+4	0.120	2+3	0.130	2+4	0.125	3+4	0.135	
			Products Numbers	Total Tax														
1+2	0.115																	
1+3	0.125																	
1+4	0.120																	
2+3	0.130																	
2+4	0.125																	
3+4	0.135																	
We notice that the value 0.125 is repeated twice, therefore it is hard to determine which two products are subject to tax. Since the total for all products is BD 5, then the answer is BD 5.125																		
Wrong answers																		
A	See above																	
B	See above																	
D	See above																	
39	Answer	D	Represents the correct chart based on the percentages.															
	Wrong answers																	
	A	There are two equal segments in the chart.																
	B	Considering the total of the two largest segments equals half the chart.																
	C	Considering one segment equals the quarter.																

40	Answer	C	Consumption value of the first 100 kw = $100 \times 0.20 = \\$20$ Consumption value of the second 100 kw = $100 \times 0.30 = \\$30$ Consumption of the last 10 kw = $10 \times 0.50 = \\$5$ The tax rate = $55 \times 0.03 = \\$1.65$ Total electricity value = \$56.65 Consumption of the first 50 cubic metres = $50 \times 0.60 = \\$30$ Consumption of the last 40 cubic metres = $40 \times 0.70 = \\$28$ The tax rate = $58 \times 0.01 = \\$0.58$ Total water value = \$58.58 The bill value = $56.65 + 58.58 = \\$115.23$
			Wrong answers
		A	Calculating electricity value = \$55 without tax Calculating water value = \$58 without tax The bill value = $55 + 58 = \\$113$
		B	If only considering the tax rate for the opposite category, then the calculations will be: Electricity consumption value = \$55, tax rate = $30 \times 0.01 + 5 \times 0.03 = \\0.45 Water consumption value = \$58, tax rate = $28 \times 0.01 = \\$0.28$ The bill value = $55 + 0.45 + 58 + 0.28 = \\113.73
		D	If considering the tax rate is for each consumption category reached, then the calculations are: Electricity consumption value = \$55, tax rate = $50 \times 0.01 + 55 \times 0.03 = \\2.15 Water consumption value = \$58, tax rate = $58 \times 0.01 = \\$0.58$ The bill value = $55 + 2.15 + 58 + 0.58 = \\115.73