Mathematics study guide on the Egyptian Knowledge Bank (EKB) - secondary stage

Subject: (Statistics)   Grade: third secondary   2021/2022

	Learning outcomes	المصادر الرقمية المتاحة على EKB	
		Nagwa	
Lesson	*Unit : Correlation and Regression*		
Correlation	• Recognize the meaning of the correlation between two variables, and the significance of this correlation strength.	https://lms.ekb.eg/repository/resource/37fcb6bd-6b50-4120-8d34-4aa06ad66dd4/en	
	• Recognize and find the correlation coefficient of two variables by using Pearson's method. • Calculate the correlation coefficient of two variables by using Pearson's method, and to mathematically illustrate its meaning.	https://lms.ekb.eg/repository/resource/33805390-6523-428e-9727-ff80b9ed8147/en	
	• Recognize and find the correlation coefficient of two variables by using Spearman's method. • Calculate the correlation coefficient of two variables by using Spearman's method, and to mathematically illustrate its meaning.	https://lms.ekb.eg/repository/resource/88dabfff-2342-4c74-abd3-0555188f8857/en	

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		Nagwa	
Regression	• Understand and solve problems on the meaning of the regression line, and to recognize its significance to the relation between two variables. • Understand the meaning of the coefficient of linear regression, to explain what can be inferred by knowing the value of this coefficient, and to solve problems on the regression coefficient. • Use a given regression line equation, to find the error in the value (y) having the value (x) given. • Use a given regression line equation, to predict the value of one of the two variables having the corresponding value of another variable given. • Solve different problems on the regression line equation.	https://lms.ekb.eg/repository/resource/d0285a32-f0b5-46cb-be6b-e19408686f0b/en	

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		Nagwa	
	Unit : Conditional Probability		
Conditional Probability	• Recognize and solve problems on the conditional probability. • Solve problems using the conditional probability properties. • Apply the conditional probability to different real-life situations. • Solve different non-routine applications using the conditional probability.	https://lms.ekb.eg/repository/resource/c6b8141d-2975-43c4-b78a-957cfe5f7a91/en https://lms.ekb.eg/repository/resource/d7a1d669-af06-48f5-bef3-9e02373f8481/en https://lms.ekb.eg/repository/resource/9039477a-b03e-4011-8839-0375057cf3ba/en	
Independent Events	• Recognize and find the probability of independent events. • Recognize and find the probability of dependent events. • Solve different problems on the independent events. • Solve different problems on the dependent events. • Solve different non-routine problems on the probability of the independent and dependent events.	https://lms.ekb.eg/repository/resource/fe89cbdc-4560-4db6-a4b9-0ca54c49fd00/en	

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		Nagwa	
	Unit : Random Variables and Probability Distributions		
Random Variable	• Recognize the concept of the random variable and its range; differentiate between the discrete and continuous random variables and to solve problems on them. • Recognize and solve problems on the probability distribution function of a discrete random variable. • Solve real-life and mathematical problems on the discrete random variable and its probability distribution.	https://lms.ekb.eg/repository/resource/4d0f9ed6-696d-4a71-baf3-f7a695669341/en	
Expectation and Variance of a Discrete Random Variable	• Recognize and solve problems on the concept of the expectation (Mean) of a discrete random variable. • Recognize and solve problems on the concept of the variance of a discrete random variable. • Recognize and find the standard deviation of a discrete random variable. • Recognize and specify the coefficient of variation. • Solve different problems on the expectation, variance, and standard deviation of a discrete random variable.	https://lms.ekb.eg/repository/resource/8b8db96e-7e0b-47d1-b06f-e20725ac167e/en https://lms.ekb.eg/repository/resource/ce57a330-1749-4fdf-aa0a-50094a631aaa/en https://lms.ekb.eg/repository/resource/e0c339ed-4dce-4623-ad7f-9aa163375ece/en	

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		Nagwa	
Probability Density Function Of Random Variable	● Recognize the concept of the probability density function of a continuous random variable, and define its properties, and to use it in calculating the probability of having the random variable value within a given interval. ● Solve different problems on the probability density function of a continuous random variable.	https://lms.ekb.eg/repository/resource/1af414aa-efd8-4453-8d1d-63aa01aa9144/en	
Unit : Normal Distribution			
Normal Distribution	● Find the probabilities values of a standard normal random variable that has a normal distribution using statistical tables. ● Solve problems on the standard normal random variable and to illustrate the results obtained. ● Calculate the probability of the standard normal random variable. ● Convert any standard normal random variable to a standard normal variable, and to solve problems on finding this probability. ● Solve problems using the table of areas under the standard normal distribution curve.	https://lms.ekb.eg/repository/resource/5a23a1c6-8fb7-4add-988e-ec71456f680a/en	

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Some Practical Applications of the Normal Distribution	- Recognize the practical applications of the normal distribution. - Solve different applications on the normal distribution.	https://lms.ekb.eg/repository/resource/325ed53d-21bc-4115-bc69-10daad7964ee/en	