Introduction To Engineering – Assignment 01

#	Student ID	Student Name	Grade (10)
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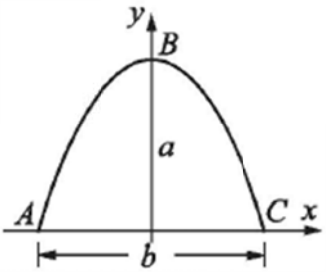
Delivery Date	

١. يتم تسليم التمرين محلولا في خلال أسبوع من تاريخ التمرين، و يتم حذف درجتين من التمرين عن كل أسبوع تأخير
٢. يتم التسليم لمعيد المقرر مباشرة
٣. تتم أجابه التمرين في نفس ورق الأسئلة

Q 1	**Calculate:** (a) $\dfrac{22+5.1^2}{50-6.3^2}$ (b) $\dfrac{44}{7}+\dfrac{8^2}{5}-\dfrac{99}{3.9^2}$
Sol 1	.....

Q 2	**Calculate:** $(b)\quad \sin^2 80^\circ - \dfrac{(\cos 14^\circ \sin 80^\circ)^2}{\sqrt[3]{0.18}}$
Sol 2	.....

Q3	Define the variables a, b, c, and d as: $a = 12$, $b = 5.6$, $c = \frac{3a}{b^2}$, and $d = \frac{(a-b)^c}{c}$, then evaluate: $(a)\quad \frac{a}{b} + \frac{d-c}{d+c} - (d-b)^2$
Sol 3	.....

Q4	The arc length of a segment of a parabola ABC of an ellipse with semi-minor axes a and b is given approximately by: $$L_{ABC} = \frac{1}{2}\sqrt{b^2+16a^2} + \frac{b^2}{8a}\ln\left(\frac{4a+\sqrt{b^2+16a^2}}{b}\right).$$ (a) Determine L_{ABC} if $a = 11$ in. and $b = 9$ in. 
Sol 4	.....

Q5	Two trigonometric identities are given by: $(a)\quad \sin 5x = 5\sin x - 20\sin^3 x + 16\sin^5 x$ For each part, verify that the identity is correct by calculating the values c left and right sides of the equation, substituting $x = \frac{\pi}{12}$. Two trigonometric identities are given by: $(a)\quad \tan 3x = \frac{3\tan x - \tan^3 x}{1 - 3\tan^2 x}$ For each part, verify that the identity is correct by calculating the values c left and right sides of the equation, substituting $x = 24°$.
Sol 5	…… …… …… …… …… …… …… …… …… …… …… …… …… ……