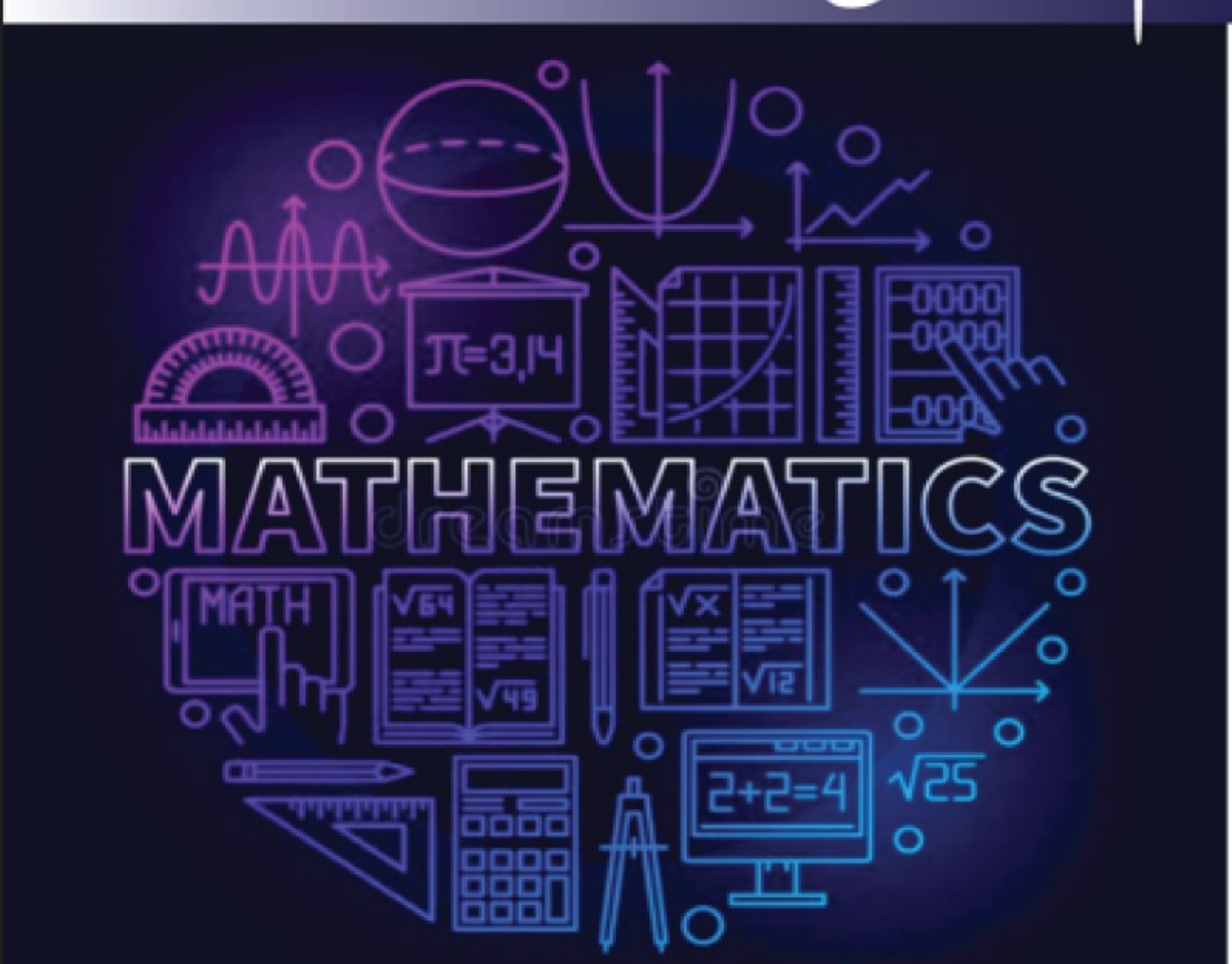
الصف الثانى عشر المتقدم

الفصل الدراسى الثالث

أ.اسلام صلاح 0544556284



2024

الرياضيات

لغة الارقام ...بوابة العلم

12 ADVANCED term 3

2023-2024

unit 6

applications of the definite integral

lesson

اهم قوانين الفصل الثالث

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اضغط

grade12ADV

Derivative	Integration
$\frac{d}{dx}(F(x)) = f'(x)$	$\int f'(x)\,dx = F(x) + c$
$\frac{d}{dx}(a) = 0 \qquad \frac{d}{dx}(ax) = a$	$\int a\,dx = ax + c$
$\frac{d}{dx}(x^2) = 2x$	$\int x\,dx = \frac{x^2}{2} + c$
$\frac{d}{dx}(x^{n+1}) = (n+1)x^n$	$\int x^n\,dx = \frac{x^{n+1}}{n+1} + c \quad , n \neq -1$
$\frac{d}{dx}(e^x) = e^x$	$\int e^x\,dx = e^x + c$
$\frac{d}{dx}(e^{-x}) = -e^{-x}$	$\int e^{-x}\,dx = -e^{-x} + c$
$\frac{d}{dx}(a^x) = a^x.lna$	$\int a^x\,dx = \frac{1}{lna}a^x + c$
$\frac{d}{dx}(lnx) = \frac{1}{x} = x^{-1}$	$\int x^{-1}\,dx = \int \frac{1}{x}\,dx = lnx + c$

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$\frac{d}{dx}(sinx) = cosx$	$\int cosx\,dx = sinx + c$
$\frac{d}{dx}(cosx) = -sinx$	$\int sinx\,dx = -cosx + c$
$\frac{d}{dx}(tanx) = sec^2x$	$\int sec^2x\,dx = tanx + c$
$\frac{d}{dx}(cotx) = -csc^2x$	$\int csc^2x\,dx = -cotx + c$
$\frac{d}{dx}(secx) = secx\,tanx$	$\int secx\,tanx\,dx = secx + c$
$\frac{d}{dx}(cscx) = -cscx\,cotx$	$\int cscx\,cotx\,dx = -cscx + c$
$\frac{d}{dx}(sin^{-1}x) = \frac{1}{\sqrt{1-x^2}}$	$\int \frac{1}{\sqrt{1-x^2}}\,dx = sin^{-1}x + c$
$\frac{d}{dx}(tan^{-1}x) = \frac{1}{1+x^2}$	$\int \frac{1}{1+x^2}\,dx = tan^{-1}x + c$
$\frac{d}{dx}(sec^{-1}x) = \frac{1}{\lvert x\rvert\sqrt{x^2-1}}$	$\int \frac{1}{\lvert x\rvert\sqrt{x^2-1}}\,dx = sec^{-1}x + c$

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