

تم تحميل هذا الملف من موقع المناهج البحرينية



\*للحصول على أوراق عمل لجميع الصفوف وجميع المواد اضغط هنا

<https://almanahj.com/bh>

\* للحصول على أوراق عمل لجميع مواد الصف الثاني عشر اضغط هنا

<https://almanahj.com/bh/12>

\* للحصول على جميع أوراق الصف الثاني عشر في مادة رياضيات ولجميع الفصول, اضغط هنا

<https://almanahj.com/bh/12math>

\* للحصول على أوراق عمل لجميع مواد الصف الثاني عشر في مادة رياضيات الخاصة بـ الفصل الثاني اضغط هنا

<https://almanahj.com/bh/12math2>

\* لتحميل كتب جميع المواد في جميع الفصول للـ الصف الثاني عشر اضغط هنا

<https://almanahj.com/bh/grade12>

[almanahjbhbot/me.t//:https](https://t.me/almanahjbhbot)

للتحدث إلى بوت على تلغرام: اضغط هنا

$$\begin{aligned}
 (1) \quad & \int x^2(5x^2 - 8x + 3) dx \\
 & = \int (5x^4 - 8x^3 + 3x^2) dx \\
 & = \frac{5x^5}{5} + \frac{8x^4}{4} + \frac{3x^3}{3} + C \\
 & = x^5 + 2x^4 + x^3 + C
 \end{aligned}$$


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$$\begin{aligned}
 (2) \quad & \int (x^2 - 8x + 16)^{7/2} dx \\
 & = \int [(x-4)^2]^{7/2} dx \\
 & = \int (x-4)^7 dx \\
 & = \frac{1}{8} (x-4)^8 + C
 \end{aligned}$$


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$$\begin{aligned}
 (3) \quad & \int 9x \sqrt{x^2 + 12} dx \\
 & = \frac{9}{2} \int 2x (x^2 + 12)^{1/2} dx \\
 & = \frac{9}{2} \frac{(x^2 + 12)^{3/2}}{3/2} + C \\
 & = 3 (x^2 + 12)^{3/2} + C
 \end{aligned}$$


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$$\begin{aligned}
 (4) \quad & \int \frac{5}{x^2} \left(1 + \frac{1}{x}\right)^3 dx \\
 & = -5 \int -x^{-2} (1 + x^{-1})^3 dx \\
 & = -\frac{5}{4} (1 + x^{-1})^4 + C
 \end{aligned}$$

$$\begin{aligned}
 (5) \quad & \int \frac{dx}{x^2 + 6x + 9} \\
 & = \int \frac{dx}{(x+3)^2} \\
 & = \int (x+3)^{-2} dx \\
 & = \frac{(x+3)^{-1}}{-1} + C \\
 & = \frac{-1}{(x+3)} + C
 \end{aligned}$$


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$$\begin{aligned}
 (6) \quad & \int \frac{1 - \sin^2 x}{\cos^2 x} dx \\
 & = \int \frac{\cos^2 x}{\cos^2 x} dx \\
 & = \int 1 dx = x + C
 \end{aligned}$$


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$$\begin{aligned}
 (7) \quad & \int (\tan^4 x - 1) dx \\
 & = \int (\tan^2 x - 1)(\tan^2 x + 1) dx \\
 & = \int (\tan^2 x - 1) \sec^2 x dx \\
 & = \int (\tan^2 x \sec^2 x - \sec^2 x) dx \\
 & = \frac{1}{3} \tan^3 x - \tan x + C
 \end{aligned}$$


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$$\begin{aligned}
 (8) \quad & \int (\cos^4 x - \sin^4 x) dx \\
 &= \int (\cos^2 x - \sin^2 x)(\cos^2 x + \sin^2 x) dx \\
 &= \int (\cos 2x)(1) dx \\
 &= \frac{1}{2} \int 2 \cos 2x dx \\
 &= \frac{1}{2} \sin 2x + C
 \end{aligned}$$


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$$\begin{aligned}
 (9) \quad & \int \frac{\cot x - \csc x}{\sin x} dx \\
 &= \int (\cot x \csc x - \csc^2 x) dx \\
 &= -\csc x + \cot x + C
 \end{aligned}$$


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$$\begin{aligned}
 (10) \quad & \int \frac{\sin x}{\cos^2 x} dx \\
 &= \int \frac{\sin x}{\cos x} \times \frac{1}{\cos x} dx \\
 &= \int \tan x \sec x dx \\
 &= \sec x + C
 \end{aligned}$$


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$$\begin{aligned}
 (11) \quad & \int (7x-3)(x+1) dx \\
 &= \int (7x^2 + 4x - 3) dx \\
 &= \frac{7}{3}x^3 + 2x^2 - 3x + C
 \end{aligned}$$

$$\begin{aligned}
 (12) \quad & \int \frac{(x-4)^2 - 9}{x-7} dx \\
 &= \int \frac{[(x-4)-3][(x-4)+3]}{(x-7)} dx \\
 &= \int \frac{(x-7)(x-1)}{(x-7)} dx \\
 &= \int (x-1) dx \\
 &= \frac{(x-1)^2}{2} + C
 \end{aligned}$$


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$$\begin{aligned}
 (13) \quad & \int 12x(x^2+1)^5 dx \\
 &= 6 \int 2x(x^2+1)^5 dx \\
 &= \frac{6}{6} (x^2+1)^6 + C \\
 &= (x^2+1)^6 + C
 \end{aligned}$$


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$$\begin{aligned}
 (14) \quad & \int \frac{7x}{\sqrt[3]{3x^2-5}} dx \\
 &= \int 7x (3x^2-5)^{-1/3} dx \\
 &= \frac{7}{6} \int 6x (3x^2-5)^{-1/3} dx \\
 &= \frac{7}{6} \frac{(3x^2-5)^{2/3}}{2/3} + C \\
 &= \frac{7}{4} (3x^2-5)^{2/3} + C
 \end{aligned}$$

$$\begin{aligned}
 (15) \quad & \int (\cot^3 x + \cot x) dx \\
 & = \int \cot x (\cot^2 x + 1) dx \\
 & = \int \cot x \csc^2 x dx \\
 & = -\frac{1}{2} \cot^2 x + C
 \end{aligned}$$


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$$\begin{aligned}
 (16) \quad & \int \sec^3 x \cos x dx \\
 & = \int \sec^3 x \cdot \frac{1}{\sec x} dx \\
 & = \int \sec^2 x dx \\
 & = \tan x + C
 \end{aligned}$$


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$$\begin{aligned}
 (17) \quad & \int \frac{\sin 2x \cos x}{\sin x} dx \\
 & = \int \frac{2 \sin x \cos x \cos x}{\sin x} dx \\
 & = \int 2 \cos^2 x dx \\
 & = \int (\cos 2x + 1) dx \\
 & = \frac{1}{2} \sin 2x + x + C
 \end{aligned}$$


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$$\begin{aligned}
 (18) \quad & \int \frac{2 - \sin^2 x}{\cos^2 x} dx \\
 & = \int \frac{1 + 1 - \sin^2 x}{\cos^2 x} dx \\
 & = \int \frac{1 + \cos^2 x}{\cos^2 x} dx \\
 & = \int (\sec^2 x + 1) dx \\
 & = \tan x + x + C
 \end{aligned}$$


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$$\begin{aligned}
 (19) \quad & \int \frac{\cos 2x}{\cos x - \sin x} dx \\
 & = \int \frac{\cos^2 x - \sin^2 x}{\cos x - \sin x} dx \\
 & = \int \frac{(\cos x - \sin x)(\cos x + \sin x)}{(\cos x - \sin x)} dx \\
 & = \int (\cos x + \sin x) dx \\
 & = \sin x - \cos x + C
 \end{aligned}$$


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$$\begin{aligned}
 (20) \quad & \int 7 \sin^3 t dt \\
 & = \frac{7}{2} \int 3 \sin^3 t dt \\
 & = -\frac{7}{3} \cos^3 t + C
 \end{aligned}$$


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