Answer on Question #61963 – Math – Calculus

Question

1 Integrate

∫(x3+3x2+2x+4)

x44+x3+x2+4x+c

x42−x3+x2+4x+c

3x44+2x3+x+c

6x4−3x2+c

Solution

$$\int (x^3 + 3x^2 + 2x + 4)dx = \frac{x^4}{4} + \frac{3x^3}{3} + \frac{2x^2}{2} + 4x + C = \frac{x^4}{4} + x^3 + x^2 + 4x + c$$

Answer: $\frac{x^4}{4} + x^3 + x^2 + 4x + c.$

Question

2 Evaluate

∫(3x−2)6dx

(3x+2)72+c

(3x+2)721+c

(3x−2)721+c

3(3x−2)72+c

Solution

$$\int (3x-2)^6 dx = \frac{1}{3}\int (3x-2)^6 d(3x-2) = \frac{1}{3}\frac{(3x-2)^7}{7} + C = \frac{(3x-2)^7}{21} + c.$$

Answer: $\frac{(3x-2)^7}{21} + c$

Question

3 Evaluate

∫cos(6x+4)dx

sin(6x+4)6+c

cos(6x+4)6+c

tan(6x+4)6+c

sec(6x+4)6+c

Solution

$$\int cos(6x+4)dx = \frac{1}{6}\int cos(6x+4)d(6x+4) = \frac{1}{6}sin(6x+4)+c$$

Answer: $\frac{1}{6}sin(6x+4)+c$

Question

4 Evaluate

∫3ex+5cos(x)−10sec2(x)dx

3ex+5sinx−10tanx+c

3ex+cosx−10tanx+c

3ex+5sinx−10secx+c

2ex−x−10tanx+c

Solution

$$\int (3e^x + 5cos(x) - 10\sec^2 x)dx = 3e^x + 5sinx - 10tanx + c$$

Answer: $3e^x + 5sinx - 10tanx + c.$

Question

5 Evaluate

∫x2(3−10x3)dx

1150(3−10x3)5)+c

110(1−10x2)5)+c

115(3−20x3)5)+c

1100(3−2x3)5)+c

Solution

$$\int x^2(3-10x^3)dx = -\frac{1}{10}\frac{1}{3}\int (3-10x^3)d(3-10x^3) = -\frac{1}{10}\frac{1}{3}\frac{(3-10x^3)^2}{2} + c$$
$$= -\frac{(3-10x^3)^2}{60} + c$$

Answer: $-\frac{(3-10x^3)^2}{60} + c$