Name: Richard

MATH 200 – QUIZ 13 ♩

Instructions: Show work and put a box around your final answer.

April 18, 2013

1. $\sum_{k=1}^{5}(3+2k) =$ $(3+2\cdot1)+(3+2\cdot2)+(3+2\cdot3)+(3+2\cdot4)+(3+2\cdot5)$

$= 3+2+3+4+3+6+3+8+3+10$

$= 5\cdot3 + 2+4+6+8+10$

$= 15 + 30 = \boxed{45}$

2. Suppose that $f(x)$ is a function for which $\int_1^5 f(x)dx = 3$ and $\int_1^7 f(x)dx = -6$. Find $\int_5^7 f(x)dx$.

By definite integral property: $\int_1^7 f(x)dx = \int_1^5 f(x)dx + \int_5^7 f(x)dx$

$-6 = 3 + \int_5^7 f(x)dx$

Therefore: $\boxed{\int_5^7 f(x)dx = -9}$

3. Write the integral that finds area under the curve $y = \sin^2(x)$ from $x = 0$ to $x = \pi$.
Do not compute the integral.

$\boxed{\int_0^{\pi} \sin^2(x)\,dx}$

Name: Richard

MATH 200 – QUIZ 13 ♪

Instructions: Show work and put a box around your final answer.

April 18, 2013

1. $\sum_{k=1}^{4}(8-2k) =$ $(8-2\cdot1)+(8-2\cdot2)+(8-2\cdot3)+(8-2\cdot4)$

$= 8-2+8-4+8-6+8-8$

$= 6+4+2+0 = \boxed{12}$

2. Suppose that $f(x)$ is a function for which $\int_2^5 f(x)dx = 4$ and $\int_2^8 f(x)dx = 9$. Find $\int_5^8 f(x)dx$.

Definite integral property: $\int_2^8 f(x)dx = \int_2^5 f(x)dx + \int_5^8 f(x)dx$

$9 = 4 + \int_5^8 f(x)dx$

Therefore $\boxed{\int_5^8 f(x)dx = 5}$

3. Write the definite integral that finds area under the curve $y = e^x + 2x$ from $x = 1$ to $x = 4$.
Do not compute the integral.

$\boxed{\int_1^4 (e^x + 2x)\,dx}$

Name: Richard

MATH 200 – QUIZ 13 ♩

Instructions: Show work and put a box around your final answer.

April 18, 2013

1. $\sum_{k=1}^{4}(2k-4) =$ $(2\cdot1-4)+(2\cdot2-4)+(2\cdot3-4)+(2\cdot4-4)$

$= 2-4+4-4+6-4+8-4$

$= -2+0+2+4 = \boxed{4}$

2. Suppose that $f(x)$ is a function for which $\int_2^5 f(x)dx = 7$ and $\int_2^8 f(x)dx = 8$. Find $\int_5^8 f(x)dx$.

Definite integral property: $\int_2^8 f(x)\,dx = \int_2^5 f(x)\,dx + \int_5^8 f(x)\,dx$

$8 = 7 + \int_5^8 f(x)\,dx$

Therefore $\boxed{\int_5^8 f(x)\,dx = 8-7 = 1}$

3. Write the definite integral that finds area under the curve $y = \sqrt{\sin(x)}$ from $x = 0$ to $x = \pi$. Do not compute the integral.

$\boxed{\int_0^{\pi} \sqrt{\sin(x)}\,dx}$

Name: Richard

MATH 200 – QUIZ 13 ♪

Instructions: Show work and put a box around your final answer.

April 18, 2013

1. $\sum_{k=1}^{4}(k^2+2) =$ $(1^2+2)+(2^2+2)+(3^2+2)+(4^2+2)$

$= 3+6+11+18 = \boxed{38}$

2. Suppose that $f(x)$ is a function for which $\int_0^5 f(x)dx = -7$ and $\int_0^6 f(x)dx = 9$. Find $\int_5^6 f(x)dx$.

Definite integral property: $\int_0^6 f(x)\,dx = \int_0^5 f(x)\,dx + \int_5^6 f(x)\,dx$

$9 = -7 + \int_5^6 f(x)\,dx$

Thus $\boxed{\int_5^6 f(x)\,dx = 9+7 = 16}$

3. Write the definite integral that finds area under the curve $y = 2e^{\cos x}$ from $x = 1$ to $x = 4$. Do not compute the integral.

$\boxed{\int_1^4 2e^{\cos(x)}\,dx}$