Week #12 Quiz

Problem 1.

Find the definite integral $\int_{-2}^{5}(x+1)dx$
A). -17.5
B). 0
C). 27/2
D). 35/2

Ans: D

Problem 2.

Find the definite integral $\int_{1}^{3}(x^2+1)dx$
A). 32/3
B). 8
C). 2
D). 26

Ans: A

Problem 3.

Find the integral $\int x\sqrt{x}d\,x$
A). $\frac{5}{2}x^{5/2}$
B). $\frac{2}{5}x^{1/2}$
C). $\frac{2}{5}x^{5/2}$
D). $\frac{5}{2}x^{1/2}$

Ans: C

Problem 4.

Find one antiderivative of $f(x) = x^2 - x + 2$
A). $2x - 1 + C$
B). $\frac{x^3}{3} - \frac{x^2}{2} + 2x + C$
C). $x^3 - x^2 + 2x$
D). $\frac{x^3}{3} - \frac{x^2}{2} + 2 + C$
Ans: B

Problem 5.

Find the antiderivative of $f(x) = 1 - e^x$

A). $1 - e^x$

B). $1 - e^{-x}$

C). $x - e^x$

D). $x + e^x$

Ans C.

Problem 6.

Find the antiderivative of $f(x) = (1 + x)/x$

A). $1 + \ln|x| + c$

B). $\ln|x| + c$

C). $1 + \frac{1}{x^2} + C$

D). $x + \ln|x| + c$

Ans: D

Problem 7.

Compute the definite integral $\int_1^3 \frac{3}{x^3} dx$

A). 1/2

B). 1/3

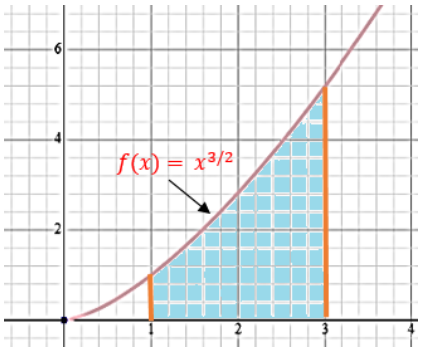
C). 3

D). 4/3

Ans: D

Problem 8.

Which of the intergral calculates the area of the shaded region in the following figure.



A). $\int_1^3 \frac{3}{x^2} dx$
B). $\int_1^3 x^{3/2} dx$
C). $\int x\sqrt{x} d\, x$
D). $\int \frac{3}{x^2} d\, x$

Ans: B

Problem 9.

Find the integral $\int_0^9 5\sqrt{x} dx$
A). 135
B). 90
C). 405/2
D). 45/2

Ans: A

Problem 10.

Find the definite integral $\int_0^2 5x^4 dx$.

A). 120
B). 32
C). 80
D). 160

Ans: B.

Problem 11.
Find definite integral $\int_2^2 5e^x dx$

A). 5
B). $5e^2$
C). 0
D). $5e^0$

Ans: C.

Problem 12

Which of the following is correct?

A). $\int_1^3 e^x dx = \int_3^1 e^x dx$
B). $\int_1^3 e^x dx = -\int_3^1 e^x dx$
C). $\int_3^1 e^x dx = \int_3^1 e^x dx + \int_2^1 e^x dx$
D). $\int_3^1 e^x dx = \int_3^1 e^x dx - \int_2^1 e^x dx$

Ans: B