

WORKSHEET # 11

LESSON # 69 Derivatives & Integrals of Logarithmic/Exp. Func

Row # _____

Name _____

Period _____

Pg. 365

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| 98. $\int \frac{dx}{e^x}$. | 99. $\int e^{-5x} dx$. |
| 100. $\int e^{\tan x} \sec^2 x dx$. | 101. $\int e^{\sin x} \cos x dx$. |
| 102. $\int x^3 e^{x^4} dx$. | 103. $\int x^2 e^{-2x^3} dx$. |
| 104. $\int \frac{e^x + e^{-x}}{e^x - e^{-x}} dx$. | 105. $\int \frac{e^x}{1 + e^x} dx$. |
| 106. $\int \sqrt{e^x} dx$. | 107. $\int e^{2t} \sqrt{1 + e^{2t}} dt$. |
| 108. $\int (x + 3) \exp(x^2 + 6x) dx$. | |
| 109. $\int \sin x \exp(\cos x) dx$. | |
| 110. $\int e^x \sin(1 + e^x) dx$. | 111. $\int e^{-x} \sec^2(2 - e^{-x}) dx$. |
| 112. $\int 2^{5x} dx$. | 113. $\int \pi^{\sin x} \cos x dx$. |
| 114. $\int [ex^2 + (\frac{1}{2} \ln 2) \sin x] dx$. | |
| 115. $\int (x \ln 3 - 4\pi e^2 \cos x) dx$. | |
| 116. $\int e^{2 \ln x} dx$. | 117. $\int \{\ln(e^x) + \ln(e^{-x})\} dx$. |
| 118. $\int \frac{dy}{\sqrt{y} e^{\sqrt{y}}}$. | 119. $\int \frac{e^{\sqrt{y}}}{\sqrt{y}} dy$. |
| 120. $\int_0^{\ln 2} e^{-3x} dx$. | 121. $\int_0^{\ln 5} e^x(3 - 4e^x) dx$. |
| 122. $\int_1^{\sqrt{2}} x 4^{-x^2} dx$. | 123. $\int_1^2 (3 - e^x) dx$. |
| 124. $\int_0^e \frac{dx}{x + e}$. | 125. $\int_{-\ln 3}^{\ln 3} \frac{e^x}{e^x + 4} dx$. |

129. Find the intersections of the curves $y = 2^x$ and $y = 3^{x+1}$.
130. Find a point on the graph of $y = e^{3x}$ at which the tangent line passes through the origin.
131. Find $f'(x)$ if $f(x) = x^e$.
137. Find the maximum value of $x^3 e^{-2x}$.
138. Prove: $e^x \geq 1 + x$. [Hint: Show that $1 + x - e^x \leq 0$.]
139. Find the area of the region enclosed by $y = e^x$, $y = 3$, and $x = 0$.