

Εργαστήριο 4 - Απαντήσεις

In[1]:= **Expand** [(e^x + e^{2x})⁴]

Out[1]= e^{4x} + 4 e^{5x} + 6 e^{6x} + 4 e^{7x} + e^{8x}

In[2]:=
$$\frac{\sqrt[3]{\text{Sin}\left[\frac{\pi}{3}\right]^2}}{\text{ArcTan}\left[\frac{\pi}{5}\right]}$$

Out[2]=
$$\frac{3^{1/3}}{2^{2/3} \text{ArcTan}\left[\frac{\pi}{5}\right]}$$

In[3]:= **N** [% , 20]

Out[3]= 1.6195887004714138831

In[4]:=
$$e^{\text{Log}[3]} \sqrt{\text{Abs}\left[-\text{Sec}\left[\left(\frac{\pi}{7}\right)^2\right]\right]}$$

Out[4]=
$$3 \sqrt{\text{Sec}\left[\frac{\pi^2}{49}\right]}$$

In[5]:= **N** [% , 20]

Out[5]= 3.0307926169822788207

In[6]:= **x1 = 4;**
y1 = -3;
x2 = 1;
y2 = 1;

In[10]:= **d =** $\sqrt{(x2 - x1)^2 + (y2 - y1)^2}$

Out[10]= 5

In[11]:= **Factor** [12 x² + 27 x * y - 84 y²]

Out[11]= 3 (4 x - 7 y) (x + 4 y)

In[12]:= **Expand** [(x + y)² (3 x - y)³]

Out[12]= 27 x⁵ + 27 x⁴ y - 18 x³ y² - 10 x² y³ + 7 x y⁴ - y⁵

In[13]:= **Together** [$\frac{2}{x^2} - \frac{x^2}{2}$]

Out[13]=
$$\frac{4 - x^4}{2 x^2}$$

In[14]:= **1 =**
$$\frac{x^3 + 2 x^2 - x - 2}{x^3 + x^2 - 4 x - 4}$$

Out[14]=
$$\frac{-2 - x + 2 x^2 + x^3}{-4 - 4 x + x^2 + x^3}$$

In[15]:= **Numerator**[1]

Out[15]= $-2 - x + 2x^2 + x^3$

In[16]:= **Factor**[%]

Out[16]= $(-1 + x)(1 + x)(2 + x)$

In[17]:= **Denominator**[1]

Out[17]= $-4 - 4x + x^2 + x^3$

In[18]:= **Factor**[%]

Out[18]= $(-2 + x)(1 + x)(2 + x)$

In[19]:= **Simplify**[1]

Out[19]= $\frac{-1 + x}{-2 + x}$

In[20]:= **Apart**[1]

Out[20]= $1 + \frac{1}{-2 + x}$

In[21]:= **f**[x_] := x^2

In[22]:= **f**[2]

Out[22]= 4

In[23]:= **g**[x_] := \sqrt{x}

In[24]:= **g**[4]

Out[24]= 2

In[25]:= **h**[x_] := $x + \text{Sin}[x]$

In[26]:= **h** $\left[\frac{\pi}{2}\right]$

Out[26]= $1 + \frac{\pi}{2}$

In[27]:= **f**[x_] := **Which**[$x \geq 0$, $x^2 + 1$, $x < 0$, $-x - 1$]

In[28]:= **Plot**[**f**[x], {x, -3, 3}]

Out[28]=

