

1. $\Rightarrow A$

2. $\rightarrow A$ $x^2(x-3) + x-3 = 0 \Leftrightarrow (x^2+1)(x-3) = 0 \Leftrightarrow x = 3$

3. $\rightarrow A$ ~~64a + 8b +~~

4. $\rightarrow B$ $\int_0^{\pi/4} 2\cos 2x dx = \int_0^{\pi/2} \cos u du = [\sin u]_0^{\pi/2} = 1$

5. $\rightarrow A$ $\frac{dy}{dx} = 2\cos 3x (3x)' = 6\cos 3x \Rightarrow \frac{dy}{dx}(1.0) = 5,9918$

6. $\rightarrow A$ $f(x) = \sin 2x$ $f'(x) = 2\cos 2x$ $f''(x) = -4\sin 2x$

$f'''(x) = -8\cos 2x$ $f^{(4)}(x) = 16\sin 2x$ $f^{(5)}(x) = 32\cos 2x$

$\frac{32\cos(x-0)^5}{5!} = \dots = 0,26671 x^5$

7. $\rightarrow \Gamma$ Για πάνω από δέκα παραγωγές η παραγωγισιμότητα

Αρα είναι 2ος βαθμ. $f(3) = 6$ $f'(3) = 8$ $f''(3) = 11$ $f(x) = 5,5x^2 - 25x + 31,5$ $f(7) = 126$

8. $\rightarrow B$ $\frac{dy}{dx} = y^3 + 2$ $y(0) = 3$ $y' = y^3 + 2$
 $y'' = 0$
 $y = (y^3 + 2)x + C \rightarrow 3$

$y(0) + \frac{0,2^1}{1!} y'(0) + \frac{0,2^2}{2!} y''(0) = 3 + 0,2 \cdot 29 = 8,8$
 $y^3(0) + 2$

9. $\rightarrow B$