Differentiation Quiz D

Use the rules for differentiation to find $\frac{dy}{dx}$ (no t's in your answers.)

1. $y = 2x^3 - 4x + 21$

2. $y = u^2, \quad u = \cos v, \quad v = x^4 - 3$

3. $y = \log_2 x - 2^x - \cos x + (3x + 5)^5$

4. $y = -\cos t, \quad x = -\sin t$

5. $y = \cos^5(2x - 1)$

6. $x^2 + 4xy + 3y^2 = 22$

7. $y = \frac{-12}{(x + 3)^3}$

8. $y = (5x - 3)^3(2x + 5)$

9. $y = \cos^3(x^2 + 3)$

10. $2e^x y = (\tan x)$

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

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Answers

1. $48x^3 + 8x + 2$

2. $-8x^3 \cos\left(x^4 - 3\right)\sin\left(x^4 - 3\right)$

3. $\frac{1}{x \ln 3} - 3^x \ln 3 + \cos x + 6(2x + 4)^2$

4. $\frac{x}{\sqrt{1 - x^2}}$

5. $-10\cos^4(2x - 1)\sin(2x - 1)$

6. $\frac{-x - 2y}{2x + 3y} \text{ or } -\frac{x + 2y}{2x + 3y}$

7. $\frac{36}{(x + 3)^4}$

8. $(5x - 3)^2[(5x - 2)(2) + (2x + 5)(15)]$
   $(5x - 3)^2(40x + 71)$

9. $-12x^2$

10. $\frac{\sec^2 x - 2ye^x}{2e^x}$

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Differentiation Quiz D

Non-Parametric

Use the rules for differentiation to find $\frac{dy}{dx}$ (no t's in your answers.)

1. $y = 2x^3 - 4x + 21$ 1. _____

2. $y = \cos^2(x^4 - 3)$ 2. _____

3. $y = \log_2 x - 2^x - \cos x + (3x + 5)^5$ 3. _____

4. $y = -\cos(\arcsin(-x))$ 4. _____

5. $y = \cos^5(2x - 1)$ 5. _____

6. $x^2 + 4xy + 3y^2 = 22$ 6. _____

7. $y = \frac{-12}{(x + 3)^3}$ 7. _____

8. $y = (5x - 3)^3(2x + 5)$ 8. _____

9. $y = \cos^3(x^2 + 3)$ 9. _____

10. $2e^x y = (\tan x)$ 10. _____

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