

1. $y = (\tan^{-1}(x))^2$

2. $y = \tan^{-1}(x^2)$

3. $y = \sin^{-1}(2x+1)$

4. $G(x) = \sqrt{1-x^2} \arccos x$

5. $y = x \sin^{-1} x + \sqrt{1-x^2}$

Review:

Is the answer I chose for #6 correct? If it is correct prove it is correct. If it is not correct state my mistake.

6. $x^2 - 3xy + y^2 = 10$

a. $\frac{dy}{dx} = \frac{-3y-2x}{-3x+2y}$

b. $\frac{dy}{dx} = \frac{3y-2x}{-3x+2y}$

c. $\frac{dy}{dx} = \frac{3y+3x-2x}{2y}$

d. $\frac{dy}{dx} = \frac{-3y+3x-2x}{2y}$

e. $\frac{dy}{dx} = \frac{2y+2x}{-3}$

Answers:

1 $y' = \frac{2 \tan^{-1} x}{x^2 + 1}$

2 $y' = \frac{2x}{x^4 + 1}$

3 $y' = \frac{1}{\sqrt{-1-x^2}}$

4 $G' = -1 - \frac{x \cos^{-1} x}{\sqrt{1-x^2}}$

5 $y' = \sin^{-1} x$