

Quiz 2 MA3521 Version 3

7. The solution of the differential equation $y' = x^2y$ is

Select the correct answer.

(a) $y = ce^{x^2}$

Out[25]=

(b) $y = ce^{x^3}$

(c) $y = c + e^{x^2}$

(d) $y = ce^{x^3/3}$

(e) $y = c + e^{x^3/3}$

9. An integrating factor for the linear differential equation $x^2y' + xy = 1$ is

Select the correct answer.

(a) 0

Out[26]=

(b) 1

(c) x

(d) $1/x$

(e) e^x

11. The differential equation $(y^3 + 6xy^4)dx + (3xy^2 + 12x^2y^3)dy = 0$ is

Select the correct answer.

(a) exact with solution $y^4/4 + 6xy^5/5 + 3x^2y^2/2 + 4x^3y^3 + c$

Out[27]=

(b) exact with solution $y^4/4 + 6xy^5/5 + 3x^2y^2/2 + 4x^3y^3 = c$

(c) exact with solution $xy^3 + 3x^2y^4 = c$

(d) exact with solution $xy^3 + 3x^2y^4 + c$

(e) not exact

18. The differential equation $y' = \sqrt{2x - y + 1} + 2$ has the solution
Select the correct answer.

(a) $y = ((-x + c)/2)^2$

Out[28]=

(b) $2x - y + 1 = ((-x + c)/2)^2$

(c) $y = 2(2x - y + 1)^{3/2}/3 + c$

(d) $y = 2(2x - y + 1)^{3/2}/3 - x + c$

(e) $2x + y = ((-x + c)/2)^2$

19. Solve the problem $y' = xy$, $y(1) = 2$ numerically for $y(1.2)$ using $h = 0.1$.
Select the correct answer.

(a) 2.1

Out[29]=

(b) 2.442

(c) 2.242

(d) 2.421

(e) 2.4