Test no : 1

1. The differential eqution of the family parabolas $y^2 = 4ax$ is

a) $\frac{dy}{dx} = 4\left(\frac{dy}{dx}\right)^2$ b) $y = 2x\frac{dy}{dx}$ c) $\frac{d^2y}{dx^2} = 4$ d) none

2. The differential eqution of the family of straight lines is

a) $\frac{dy}{dx} = 4\left(\frac{dy}{dx}\right)^2$ b) $y = 2x\frac{dy}{dx}$ c) $\frac{d^2y}{dx^2} = 0$ d) none

3. The differential equation that represents all parabolas each of which as a rectum 4a & whose axes are parallel to the x-axis

a) $2a\frac{d^2y}{dx^2} + \left(\frac{dy}{dx}\right)^3 = 0$ b) $a\frac{d^2y}{dx^2} + \left(\frac{dy}{dx}\right)^3 = 0$ c) $a\frac{d^2y}{dx^2} + 2\left(\frac{dy}{dx}\right)^3 = 0$ d) $a\frac{d^2y}{dx^2} - 2\left(\frac{dy}{dx}\right)^3 = 0$

4.Differential equation of the family of circles with center at origin & radius a is

a) $x - y\frac{dy}{dx} = 0$ b) $y - x\frac{dy}{dx} = 0$ c) $x + y\frac{dy}{dx} = 0$ d) $y + x\frac{dy}{dx} = 0$

5. Differential equation of the family of circles which passes through the origin & whose centers are on the x-axis is

a) $2xy\frac{dy}{dx} + x^2 + y^2 = 0$ b) $2xy\frac{dy}{dx} + x^2 - y^2 = 0$

c) $2x\frac{dy}{dx} + x^2 - y^2 = 0$ d) $2y\frac{dy}{dx} + x^2 - y^2 = 0$

6. The differential equation of the system of circles touching the x-axis at the origin is

a) $2xy + (x^2 + y^2)\frac{dy}{dx} = 0$ b) $2xy + (x^2 - y^2)\frac{dy}{dx} = 0$

c) $2xy - (x^2 + y^2)\frac{dy}{dx} = 0$ d) $xy + (x^2 - y^2)\frac{dy}{dx} = 0$

7.The integral factor of $\frac{dy}{dx} + \frac{2y}{x} = cotx$ *is*

a) $\log \sin x$ b) x^2 c) 2/x d) cot x

8. The integral factor of $\frac{dy}{dx} + ycotx = sin2x$ *is*

a) tan x b)cot x c) sin x d) cos x

9. The integral factor of $\frac{dy}{dx} + \frac{ylog\,x}{x} = e^x x^{(-logx)/2}$ *is*

a) $x^{\frac{logx}{2}}$ b) $x^{\log\left(\frac{x}{2}\right)}$ c) $x^{\frac{-logx}{2}}$ d) $\frac{x^{(logx)}}{2}$

10.The integral factor of $\frac{dy}{dx} + \frac{y}{x} = x^2$ *is*

a) $\log x$ b) x^2 c) 1/x d) x

11. Integral factor of $\sqrt{1-x^2}\frac{dy}{dx}+y=1$ is

a) $e^{\sin^{-1}x}$ b)$y\ e^{\sin^{-1}x}$ c) $e^{\cos^{-1}x}$ d) $e^{\tan^{-1}x}$

12. The I.F. of $\frac{dy}{dx}+\frac{2xy}{1+x^2}=\frac{1}{1+x^2}$ is

a) $(1-x^2)$ b) $(e+x^2)$ c) $(1+x^2)$ d) $1/(1+x^2)$

13. If sec x is an integral factor of $\frac{dy}{dx}+Py=Q$ then P=

a) cot x b) -cot x c) tan x d) –tan x

14. If sin x is an integral factor of $\frac{dy}{dx}+Py=Q$ then P=

a) cot x b) sinx c) logsinx d) $e^{\log sinx}$

15.The integral factor of $\frac{dy}{dx}+y\,tanx=cos^3x$ *is*

a) cosx b) sinx c) cosec x d) sec x

16.The integral factor of $2x\frac{dy}{dx}+y=2x^3$ *is*

a) $\log x$ b) x^2 c) 1/x d) x

17. The I.F. of $\frac{dy}{dx}-\frac{xy}{1-x^2}=\frac{1}{1-x^2}$ is

a) $(1-x^2)$ b) $(1-x^3)$ c) $\sqrt{(1-x^2)}$ d) $1/(1+x^2)$

18.The integral factor of $\frac{dy}{dx}+y\,cot\,x=4x\,cosec\,x$ *is*

a) cosx b) sinx c) cosec x d) sec x

19.The integral factor of $(x+1)\frac{dy}{dx}+y=2/e^y$ *is*

a) $\log x$ b) x^2 c) 1/x d) x+1

20.The integral factor of $x\frac{dy}{dx}+\frac{y}{logx}=x^2$ *is*

a) $\log x$ b) $1/\log x$ c) 1/x d) x

Answer key :

1	**6**	**11**	**16**
2	**7**	**12**	**17**
3	**8**	**13**	**18**
4	**9**	**14**	**19**
5	**10**	**15**	**20**

Some impartant results:

***Test no* : 2**

1. The solution of $\frac{dy}{dx} = e^{2x-y} + x^3 e^{-y}$ is

a) $4e^y = 2e^{2x} + x^4 + c$ b) $e^y = e^{2x} + x^4/4 + c$

c) $2e^y = 2e^{2x} + x^4 + c$ d) $e^y = 4e^{2x} + 2x^4 + c$

2. The solution of $x\sqrt{1+y^2} + x\sqrt{1+x^2}\ \frac{dy}{dx} = 0$

a) $\log\left(\sqrt{1+x^2}\ \sqrt{1+y^2}\right) = 0$ b) $\left(\sqrt{1+x^2}\ \sqrt{1+y^2}\right) = 0$

c) $(1+x^2)(1+y^2) = xy + c$ d) none

3. the solution of $e^x \tan y\, dx + (1-e^x) sec^2\, y dy = 0$ is

a)$tany = c(1-e^x)$ b) $tany = c(1-e^x) + e^x$

c) $secy\ tany = c(1-e^x)$ d) $secy = c(1-e^x)$

4.The solution of $\frac{dy}{dx} + \left(\frac{1-y^2}{1-x^2}\right)^{1/2} = 0$ is

a)$\cos^{-1} y + \sin^{-1} x = c$ b) $\cos^{-1} x + \sin^{-1} y = c$

c) $\sin^{-1} y + \sin^{-1} x = c$ b) $\sin^{-1} x + \sin^{-1} y = c$

5. The solution of $\frac{dy}{dx} = \frac{y+2}{x-1}$ is

a) (x-1)(x-2)=c b) log (y+2)=c c) log (x-1) =c d)(y+2) = c(x-1)

6. The solution of $\frac{dy}{dx} = e^{2x+y}$ is

a) $e^{2x} - 2e^{-y} = c$ b) $e^{2x} + 2e^{-y} = c$ c) $e^{2x} + e^{-y} = c$ d) $e^{2x} - e^{-y} = c$

7. the solution of $\frac{dy}{dx} + \sqrt{\frac{1-y^2}{1-x^2}} = 0$ is

a) sinx+siny=c b) cosx +cos y =c c) $\sin^{-1} y + \sin^{-1} x = 0$ d) $\cos^{-1} x + \cos^{-1} y = c$

8. The solution of $\frac{dy}{dx} = e^{x+y}$ is

a) $e^{x+y} = c$ b) $e^x + e^y = c$ c) $e^x + e^{-y} = c$ d) $e^x = e^{-y} + c$

9.The solution of $(1+x^2)dy = (1+y^2)dx$ is

a) $\tan^{-1} y - \tan^{-1} x = \tan^{-1} c$ b) $\tan^{-1} y + \tan^{-1} x = \tan^{-1} c$

c) $\tan^{-1} x - \tan^{-1} y = \tan^{-1} c$ d) $\tan^{-1}(y/x) = \tan^{-1} c$

10 .Solution of $sec^2 xtanydy + sec^2 ytanx\ dx = 0\ \ is$

a) $cos\ 2x - cos\ 2y = c$ b) $cos\ 2x + cos\ 2y = c$ c) $cos\ 2x.cos\ 2y = c$ d) $sin\ 2x - sin2y = c$

11.Solution of $(xy^2 + x)dx + (yx^2 + y)dy = 0\ \ is$

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

12. The solution of $\frac{dy}{dx} - \frac{2xy}{1+x^2} = 0$ is

a) $y = c(1 + x^2)$ b) $y = (e + x^2)$ c) $logy = (1 + x^2)$ d) $y = c(1 + x^2)^2$

13. When y=vx then the equation $\frac{dy}{dx} = \left(\frac{y^3+3yx^2}{x^3+3xy^2}\right)$ is reduces to

a) $\frac{dx}{x} = \frac{2v-2v^3}{1+3v^2}dv$ b) $\frac{dx}{x} = \frac{1+3v^2}{2v-2v^3}dv$

c) $(1 + 3v^2)dv = (3x^2 - x)dx$ d) $(2v - 3v^3)dv = (3x^2 - x)dx$

14. When y=vx then the equation $x^2dy + y(x + y)dx = 0$ is reduces to

a) $xdv + (2v + v^2)dx = 0$ b) $xdv + (2x + x^2)dx = 0$

c) $vdx + (2x + x^2)dv = 0$ d) $v^2dx - (x + x^2)dv = 0$

15.The solution of $ydy + \frac{(ydx-xdy)}{x^2}$ Is

a) $\frac{y^2}{2} + \frac{x}{y} = c$ b) $\frac{y^2}{2} - \frac{x}{y} = c$ c) $\frac{y^2}{2} + \frac{y}{x} = c$ d) $\frac{y^2}{2} - \frac{y}{x} = c$

16.the equation $ydx - (x + x^2)dy = 0$ be comes exact when it is multiply by

a) x b) $1/x^2$ c) x^2 d) 1/x

17. If $Mdx + Ndy = 0\ \ is$ of the from $yf(xy)dx + xg(xy)dy = 0\ , f(xy) \neq g(xy)$ then integral factor is

a) $\frac{1}{Mx+Ny}$ b) $\frac{1}{Mx-Ny}$ c) $e^{\int Pdx}$ d) $\frac{1}{f(xy)+g(xy)}$

Answer key :

1	**6**	**11**	**16**
2	**7**	**12**	**17**
3	**8**	**13**	**18**
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5	**10**	**15**	**20**

Test no : 3

1. The general solution of $p^2 - 5p + 6 = 0$ is

   a) $(y + 2x + c)(y + 3x + c) = 0$ b) $(y - 2x + c)(y - 3x + c) = 0$

   c) $(x - 2y + c)(x - 2y + c) = 0$ d) $y = 2, x = 3$

2. The general solution of $p^2 - 7p + 12 = 0$ is

   a) $(y - 4x + c)(y - 3x + c) = 0$ b) $(y + 4x - c)(y - 3x - c) = 0$

   c) $(-x + 4y - c)(3y - x - c) = 0$ d) $(4y + x - c)(3y + x - c) = 0$

3. The general solution of $p^2 - 9p + 18 = 0$ is

   a) $(y - 3x + c)(y - x + c) = 0$ b) $(y + x - c)(y - 3x - c) = 0$

   c) $(-6x + y - c) = 0$ d) $(y - 6x - c)(y - 3x - c) = 0$

4. The general solution of $p^2 - 3p + 2 = 0$ is

   a) $(y - x + c)(y - 2x + c) = 0$ b) $(y + x - c)(y - 2x - c) = 0$

   c) $(-x + 2y - c)(y - 2x - c) = 0$ d) $(y + x - c)(y + 2x - c) = 0$

5. The general solution of $p^2 - 7p + 10 = 0$ is

   a) $(y + 2x + c)(y + 5x + c) = 0$ b) $(y - 2x - c)(y - 5x - c) = 0$

   c) $(-x + 2y - c)(y + 5x - c) = 0$ d) $(y + 2x - c)(y - 5x - c) = 0$

6 . Which one of the following is not true

   a) $y + c = 0$ is a solution of of $p^3 + 2xp^2 - y^2p^2 - 2xpy^2 = 0$

   b) $y + c = 0$ is a solution of of $p^2 - 9p + 18 = 0$

   c) $y = 3x + c$ is a solution of of $p^2 - 9p + 18 = 0$

7. The general solution of $x^2p^2 + 3xyp + 2y^2 = 0$ is

   a) $xy(xy^2 + c) = 0$ b)$(xy - c)(xy^2 - c) = 0$ c)$(xy^2 - c)(yx^2 - c) = 0$ d) none

8. The general solution of $x^2p^2 + xyp - 6y^2 = 0$ is

   a) $(xy - c)(x^2y^2 - c) = 0$ b)$(xy - c)(xy^2 - c) = 0$ c)$(xy^2 - c)(yx^2 - c) = 0$ d) none

9. The general solution of $xyp^2 + (3x^2 - 2y^2)p - 6xy = 0$ is

   a) $(xy - c)(x^2y^2 - c) = 0$ b)$(xy - c)(xy^2 - c) = 0$ c)$(y^2 + 3x^2 - c)(y - cx^2) = 0$ d) none

10. Clairait's form of differential equation is

a) $Mdx + Ndy = 0$ b) $y = f(x, y)$ c) $y = px + f(p)$ d) none

11. The general solution of $y = px + \sqrt{1 + p^2}$ is

a) $y = cx + \sqrt{1 + c^2}$ b) $y = pa + \sqrt{1 + p^2}$

c) $y = cx + \sqrt{1 + x^2}$ d) $y = cy + \sqrt{1 + c^2}$

12.The solution of $y = \sin(y - xp)$ is

a) $y = c + sin^{-1}c$ b) $y = cx + sin^{-1}c$ c) $y = x + cos^{-1}c$ d) $y = x + cos^{-1}c$

13. The general solution of $y = (x - a)p - p^2$ is

a) $y = (x - a)c - c^2$ b) $y = (x - a)x - x^2$ c) $y = (x - c)c - c^2$ d) $y = (x - a) - x^2$

14. The general solution of $y = px + a/p$ is

a) $y = cx + a/c$ b) $y + cx - a/c$ c) $y + cx + \frac{a}{c} = 0$ d) $cy - x - \frac{a}{c} = 0$

15. The general solution of $y = px + p^2$ is

a) $y = cx + c^2$ b) $y = pa + p^2$ c) $y = cx - c^2$ d) $y = cy + p^2$

16. The general solution of $y = px - p^2$ is

a) $y = cx - c^2$ b) $y = pa + p^2$ c) $y = cx + c^2$ d) $y = cy + p^2$

17. The solution of $p = \tan(y - xp)$ is

a) $c = \tan(y - xc)$ b) $c = \tan(x - yc)$ c) $y = cx + \tan^{-1} c$ d) $y = cy + \tan^{-1} c$

18. The solution of $y - px = a\tan^{-1} p$ is

a) $c = \tan(y - xc)$ b) $c = \tan(x - yc)$ c) $y = cx + a\tan^{-1} c$ d) $y = cy + \tan^{-1} c$

19. The solution of $p = \log(y - xp)$ is

a) $c = \log(xy - c)$ b) $c = \tan(x - yc)$ c) $y = cx - e^c$ d) $y = cy + \tan^{-1} c$

20. The solution of $p = \text{cosy cospx} + \text{siny sin px}(y - xp)$ is

a) $y = cx + \cos^{-1} c$ b) $y = cx - \cos^{-1} c$ c) $y = cx + \sin^{-1} c$ d) $y = cx - \sin^{-1} c$

20(a). The solution of $(y - px)^2(1 + p^2) = a^2p^2$ is

a) $y = cx + \frac{ac}{\sqrt{1+c^2}}$ b) $y = cx - \frac{a}{\sqrt{1+c^2}}$ c)$y = cx + a/\sqrt{1 + c^2}$ d) $y = cx - \sin^{-1} c$

Answer key :

1	6	11	16
2	7	12	17
3	8	13	18
4	9	14	19
5	10	15	20

Some impartant resuts :

Test no 4 :

1. The solution of $(D^2+4)y=0$ is

a)$y=Acos2x+Bsin2x$ b) $y=Acos2x+Bx$

c) $y=e^{2x}(Acos2x+Bsin2x)$ d) $y=e^{-2x}(Acos2x+Bsin2x)$

2. C.F of $(D^2-8D+16)y=e^{4x}$ is

a) $\frac{x^2e^{4x}}{2}$ b) $(Ax+B)e^{4x}$ c) $A\,e^{4x}+B\,e^{-4x}$ d) $Acos4x+Bsin\,4x$

3. C.F of $(D^2+a^2)y=sinax$ is

a) $Acosax+Bsinax$ b) $Acoshax+Bsinhax$ c) $Acosax-Bsinhax$ d) $Acos4x+Bsin\,4x$

4. The C.F. of $(D^2+2D+3)y=0$ is

a)$y=Ae^{-2x}+Be^{2x}$ b) $y=e^{x}(A\sqrt{2}x+B\sqrt{2}x)$

c) $y=e^{-2x}(Acos\sqrt{2}x+Bsin\sqrt{2}x)$ d) $y=(Acos\sqrt{2}x+Bsin\sqrt{2}x)$

5. C.F of $(D^2-2D+1)y=x^2+1$ is

a) $e^{2x}(Ax+B)$ b) $(Ax+B)e^{x}$ c) $(Ax+B)e^{-x}$ d) $(Ax+B)e^{-2x}$

6. C.F of $(D^2-4D)y=0$ is

a) $e^{2x}(Ax+B)$ b) $(Ax+B)e^{-2x}$ c) $Ae^{-2x}+Be^{2x}$ d) Acos2x+B sin2x

7. C.F of $(D^2+1)y=x$ is

a) $e^{x}(Ax+B)$ b) $(Ax+B)e^{-x}$ c) $Ae^{-x}+Be^{x}$ d) Acosx+B sinx

8. The P.I. of $(D^2+5D+7)y=5$ is

a)$2x^2-x$ b)$\frac{5}{7}$ c) $2\frac{x}{7}$ d) $\frac{5e^3}{3}$

9. The P.I of $(x^2D^2+4xD+2)y=e^{x}$ is

a) x^2e^{x} b) x^2e^{-x} c) $x^{-2}e^{x}$ d) $x^{-2}e^{-x}$

10. The P.I of $(D^2-3D+2)y=e^{3x}$ is

a) $2e^{3x}$ b) $\frac{e^{3x}}{2}$ c) $e^{3x}\frac{1}{20}$ d) $A\,e^{x}+B\,e^{2x}$

11. The P.I of $(D^2-3D+2)y=e^{x}$ is

a) xe^{-x} b) $e^{-x}/8$ c) $-e^{x}/8$ d)$-xe^{-x}$

12. The P.I. of $(D^2+2D+5)y=e^{x}x$ is

a) $\frac{e^x}{8}(x+\frac{1}{2})$ b) $\left(x-\frac{1}{2}\right)e^x/8$ c) $(x-1)e^x/8$ d) $\left(-x+\frac{1}{2}\right)e^x/8$

13. The P.I of $(D^2-3D+2)y=e^{-x}$ is

a) $xe^{-x}/6$ b) $e^{-x}/6$ c) $-e^x/3$ d)6

14. The P.I of $(D^2-5D+6)y=e^{3x}$ is

a) $A+B\,e^{2x}$ b) $A\,e^x+B\,e^{2x}$ c) $A\,e^{3x}+B\,e^{2x}$ d) $A\,e^x+B\,e^{3x}$

15. The P.I of $(D^2-4)y=e^{-4x}+e^{2x}$ is

a) $\frac{xe^{2x}}{4}+\frac{e^{-4x}}{12}$ b) e^x+e^{-4x} c) $\frac{e^x}{4}+\frac{e^{-4x}}{12}$ d) $e^{-5x}/5$

16. The P.I of $(D^2+9)y=cos3x$ *is*

a)$\frac{cosx}{2}$ b) $(sin3x)6$ $\frac{xsin3x}{6}$ d) $(x^2sin3x)/6$

17. The P.I of $(D^2+a^2)y=4sin3x$ is

a) $(2xsin3x)/3$ b)) $-(2xsin3x)/3$ c) $(2xcos3x)/3$ d) $(-2xcos3x)/3$

18. The P.I of $(D^2+2)y=2cos^2x$ *is*

a) $2cos^2x$ b) cos^2x c) $2sin^2x$ d) sin^2x

19. The P.I of $(D^2-1)y=e^x+cosx$ is

a) $\left(\frac{xe^x}{2}\right)-\frac{cos2x}{5}$ b) $\left(\frac{-xe^x}{2}\right)-\frac{cos2x}{5}$ c) $\left(\frac{xe^x}{2}\right)+\frac{cos2x}{5}$ d) $\left(-\frac{xe^x}{2}\right)+\frac{cos2x}{5}$

20. The P.I of $(x^2D^2+xD+1)y=x$ is

a) e^x b) e^{-x} c) $2/x$ d) $x/2$

21. The P.I. of $(D^2+D+1)y=x^2$ is

a)$2x^2-x$ b) x^2-2x c) $2x$ d) $x^3/3$

22. The P.I of $(D^2-2D+4)y=e^xsinx$ is

a) $(e^xsinx)/2$ b)) $(e^xsinx)/4$ c) $(e^xcosx)/2$ d) (e^xcosx)

23. The P.I of $(D+1)^3y=e^{-x}+x^2$ is

a) $\left(\frac{x^3e^{-x}}{6}\right)+x^2+6x+12$ b)) $\left(\frac{x^3e^{-x}}{-6}\right)+x^2+6x+12$

c)$\left(\frac{x^3e^{-x}}{-6}\right)+x^2-6x+12$ d) $\left(\frac{x^3e^{-x}}{6}\right)+x^2-6x+12$

24. The P.I of $(D^2-2D+2)y=e^xsinx$ is

a) $(e^xcosx)/2$ b)) $(-xe^xcosx)/2$ c) $(xe^xcosx)/2$ d) $(-xcosx)/2$

25. The equation of $pdx + Qdy + Rdz = 0$ is integrable if

a) $P\left(\frac{\partial Q}{\partial y} - \frac{\partial R}{\partial x}\right) + Q\left(\frac{\partial R}{\partial y} - \frac{\partial P}{\partial z}\right) + R\left(\frac{\partial P}{\partial x} - \frac{\partial Q}{\partial y}\right) = 0$ b) $P\left(\frac{\partial Q}{\partial z} - \frac{\partial R}{\partial y}\right) + Q\left(\frac{\partial R}{\partial x} - \frac{\partial P}{\partial z}\right) + R\left(\frac{\partial P}{\partial y} - \frac{\partial Q}{\partial x}\right) = 0$

c) $P\left(\frac{\partial Q}{\partial x} - \frac{\partial R}{\partial y}\right) + Q\left(\frac{\partial R}{\partial z} - \frac{\partial P}{\partial x}\right) + R\left(\frac{\partial P}{\partial y} - \frac{\partial Q}{\partial z}\right) = 0$ d) $P\left(\frac{\partial Q}{\partial z} - \frac{\partial R}{\partial y}\right) - Q\left(\frac{\partial R}{\partial x} - \frac{\partial P}{\partial z}\right) - R\left(\frac{\partial P}{\partial y} - \frac{\partial Q}{\partial x}\right) = 0$

26. The general solution of $yzdx + zxdy + xydz = 0$ is

a) $x + y + z = 0$ b) $xyz = c$ c) $xy + yz + zx = c$ d) none

27. The general solution of $(y + z)dx + (z + x)dy + (x + y)dz = 0$ is

a) $xy + yz + zx = 0$ b) $\frac{x^2}{2} + \frac{y^2}{2} + \frac{z^2}{2} = c$ c) $log\ xy + logyz + logzx = c$ d) $e^{xy} + e^{yz} + e^{zx} = c$

28.The general solution of $(y^2 + z^2)dx + xydy + zxdz = 0$ is

a) $y^2 + z^2 + x^2 = c$ b) $(y^2 + z^2)x^2 = c$ c) $y^2 + z^2 = cx^2$ d) $y^2 + z^2 = cx$

29 . Which of the following equation is integrable

a) $(y + z)dx + (z + x)dy + (x + y)dz = 0$ b) $(y - z)dx + (z + x)dy + (x + y)dz = 0$

c) $(y + z)dx + (z + x)dy + (x - y)dz = 0$ d) $(y + z)dx + (z - x)dy + (x + y)dz = 0$

30. The general solution of $(a^2 - z^2)(ydx + xydy) - 2zdz = 0$ is

a) $y^2 + z^2 + x^2 = c$ b) $(y^2 + a^2)x^2 = c$ c) $xy + \log(a^2 - z^2) = c$ d) $y^2 + z^2 = cx$

Answer key :

1	6	11	16	21	26
2	7	12	17	22	27
3	8	13	18	23	28
4	9	14	19	24	29
5	10	15	20	25	30