

Form the partial differential equations by eliminating the arbitrary constants from the following :

1. $z = (x^2 + a)(y^2 + b)$

2. $2z = (ax + y)^2 + b$

3. $ax^2 + by^2 + cz^2 = 1$

4. $(x - a)^2 + (y - b)^2 + z^2 = a^2 + b^2$

5. $(x - a)^2 + (y - b)^2 + z^2 = 1$

6. $x^2 + y^2 = (z - c)^2 \tan^2 \alpha$

Form the partial differential equations by eliminating the arbitrary functions from the following :

7. $z = F(x^2 - y^2)$

8. $z = x + y + f(xy)$