

Exercise 13

Pell's Exuqtion

In exercises 1-10, find a non-trivial solution of the equation $x^2 - dy^2 = 1$ for the given d .

- ** 1. $d = 2$
- ** 2. $d = 3$
- ** 3. $d = 5$
- ** 4. $d = 6$
- ** 5. $d = 7$
- *** 6. $d = 8$
- *** 7. $d = 10$
- *** 8. $d = 12$
- *** 9. $d = 13$
- *** 10. $d = 14$

In exercises 11-20, determine if the given equation has any solutions.

- ** 11. $x^2 - 2y^2 = -1$
- ** 12. $x^2 - 2y^2 = 2$
- ** 13. $x^2 - 2y^2 = -1$
- *** 14. $x^2 - 3y^2 = -1$
- ** 15. $x^2 - 3y^2 = 2$
- ** 16. $x^2 - 3y^2 = -2$
- ** 17. $x^2 - 5y^2 = -1$
- ** 18. $x^2 - 2y^2 = -1$
- ** 19. $x^2 - 2y^2 = -1$
- ** 20. $x^2 - 2y^2 = -1$
- ** 21. $x^2 - 2y^2 = -1$