DIFFERENCE OF TWO SQUARES

Task 1 – Fully factorise each of the following expressions.

1) $x^2 - 16 = (x + 4)(x - 4)$

2) $x^2 - 25 = (x + 5)(x - 5)$

3) $y^2 - 1 = (y + 1)(y - 1)$

4) $d^2 - 36 = (d + 6)(d - 6)$

5) $r^2 - 49 = (r + 7)(r - 7)$

6) $n^2 - 9 = (n + 3)(n - 3)$

7) $k^2 - 81 = (k + 9)(k - 9)$

8) $p^2 - 121 = (p + 11)(p - 11)$

9) $z^2 - 144 = (z + 12)(z - 12)$

10) $c^2 - 4 = (c + 2)(c - 2)$

11) $x^2 - 64 = (x + 8)(x - 8)$

12) $4r^2 - 81 = (2r + 9)(2r - 9)$

13) $121g^2 - 16 = (11g + 4)(11g - 4)$

14) $25x^2 - 49 = (5x + 7)(5x - 7)$

15) $4y^2 - 25 = (2y + 5)(2y - 5)$

16) $9z^2 - 4 = (3z + 2)(3z - 2)$

17) $36q^2 - 49 = (6q + 7)(6q - 7)$

18) $100 - p^2 = (10 + p)(10 - p)$

19) $25 - x^2 = (5 + x)(5 - x)$

20) $4 - e^2 = (2 + e)(2 - e)$

21) $16 - y^2 = (4 + y)(4 - y)$

22) $81 - 4f^2 = (9 + 2f)(9 - 2f)$

23) $64 - 9h^2 = (8 + 3h)(8 - 3h)$

24) $a^2 - b^2 = (a + b)(a - b)$

25) $c^2 - d^2 = (c + d)(c - d)$

Challenge – Fully factorise each of the following expressions.

26) $2u^2 - 32 = 2(u^2 - 16) = 2(u + 4)(u - 4)$

27) $2e^2 - 18 = 2(e^2 - 9) = 2(e + 3)(e - 3)$

28) $3k^2 - 75 = 3(k^2 - 25) = 3(k + 5)(k - 5)$

29) $18i^2 - 2 = 2(9i^2 - 1) = 2(3i + 1)(3i - 1)$

30) $5y^2 - 45 = 5(y^2 - 9) = 5(y + 3)(y - 3)$

31) $4s^2 - 16 = 4(s^2 - 4) = 4(s + 2)(s - 2)$

32) $9h^2 - 9 = 9(h^2 - 1) = 9(h + 1)(h - 1)$

33) $12t^2 - 75 = 3(4t^2 - 25) = 3(2t + 5)(2t - 5)$

34) $20y^2 - 320 = 20(y^2 - 16) = 20(y + 4)(y - 4)$

35) $p^8 - 36 = (p^4 + 6)(p^4 - 6)$

36) $b^6 - 81 = (b^3 + 9)(b^3 - 9)$

37) $4a^4 - b^4 = (2a^2 + b^2)(2a^2 - b^2)$

38) $16e^2f^4 - 81 = (4ef^2 + 9)(4ef^2 - 9)$

39) $225s^6t^8 - 100 = (15s^3t^4 + 10)(15s^3t^4 - 10)$

40) $a^4 - b^4 = (a^2 + b^2)(a^2 - b^2)$

$= (a^2 + b^2)(a + b)(a - b)$