EQUATIONS

1) Solve for \( m \): \( 5m - 3 = 27 \)
2) Solve \( 2y + 1 = y - 9 \)
3) Solve for \( x \): \( \frac{x}{3} - 4 = 7 \)
4) Solve \( \frac{x}{2} - \frac{x+1}{5} = 1 \)
5) If \( A = \frac{1}{2} h(a + b) \), find the value of \( a \) if \( A = 100 \), \( h = 10 \) and \( b = 8 \).
6) Given \( A = 4\pi r^2 \), find \( r \) correct to 2 decimal places if \( A = 200 \).
7) Solve \( 4n - 3 > 5n + 1 \)
8) Solve for \( x \) and plot your solution on a number line: \(-5 < 2x + 7 \leq 11\)
9) Solve \(|4p - 3| = 5\)
10) Solve for \( y \): \( |3y + 2| \geq 5 \)
11) Solve \(|2x - 1| = x\)
12) Solve \( 3^x = 81 \)
13) Solve \( 2^{3x-1} = \frac{1}{4} \)
14) Solve \( x^2 - 2x - 3 = 0 \)
15) Solve \( 5x^2 - 20 = 0 \)
16) Solve \( n^2 + n = 12 \)
17) Solve \( 2x^2 + 3x - 7 = 0 \) and write your solutions to 1 decimal place.
18) Find the exact solutions of \( x^2 - 4x + 1 = 0 \)
19) Solve \( k^2 - 5k + 6 \geq 0 \)
20) Solve \( 16 - n^2 > 0 \)
21) Solve the simultaneous equations \( 2x - 3y - 12 = 0 \) and \( 5x + 2y - 11 = 0 \)
22) Solve these equations simultaneously: \( 3a - b - 9 = 0 \) and \( ab = -6 \)
23) Solve the simultaneous equations \( t_1^2 + t_2^2 = 9 \) and \( 2t_1 - 5t_2 - 6 = 0 \)
ANSWERS

1) \( m = 6 \)
2) \( y = -10 \)
3) \( x = 33 \)
4) \( x = 4 \)
5) \( a = 12 \)
6) \( r = 3.99 \)
7) \( n < -4 \)
8) \( -6 < x \leq 2 \)
9) \( p = 2, -\frac{1}{2} \)
10) \( y \geq 1, y \leq -2 \frac{1}{3} \)
11) \( x = 1, \frac{1}{3} \)
12) \( x = 4 \)
13) \( x = -\frac{1}{3} \)
14) \( x = 3, -1 \)
15) \( x = \pm 2 \)
16) \( n = -4, 3 \)
17) \( x = 1.3, -2.8 \)
18) \( x = \frac{4 \pm \sqrt{12}}{2} = 2 \pm \sqrt{3} \)
19) \( k \leq 2, k \geq 3 \)
20) \( -4 < n < 4 \)
21) \( x = 3, y = -2 \)
22) \( a = 2, b = -3 \) and \( a = 1, b = -6 \)
23) \( t_1 = 3, t_2 = 0 \) and \( t_1 = -2 \frac{5}{29}, t_2 = -2 \frac{2}{29} \)