

a Solve $\frac{x}{3} + \frac{y}{2} = 4$ and $x - y = 2$ $x = 6, y = 4$ clear fractions with two denominators	b Solve $y = x^2 - 2x$ and $y = x + 4$ $x = 4, y = 8$ $x = -1, y = 3$ a curve with an x term	c Solve $y = x^2 - 4x + 7$ and $y = 2x - 2$ $x = 3, y = 4$ a repeated root: one pair	d Solve $xy = 6$ and $2x + y = 7$ $x = 2, y = 3$ $x = \frac{3}{2}, y = 4$ xy and a line: a fraction pair
e Solve $\frac{2}{x} + \frac{3}{y} = 2$ and $\frac{4}{x} - \frac{3}{y} = 1$ $x = 2, y = 3$ unknowns on the bottom	f $x = 2, y = -1$ solves $ax + by = 7$ and $bx - ay = 1$. Find a and b . $a = 3, b = -1$ working back to the coefficients	g Solve $ax + y = 5$ and $x + y = 3$ for x and y $x = \frac{2}{a-1}, y = \frac{3a-5}{a-1}$ a letter as a coefficient	h Show that $y = 2x - 3$ and $y = x^2 + 1$ do not meet $b^2 - 4ac = -12 < 0$ no meeting point: $b^2 - 4ac < 0$
i Solve $y = x^2$ and $y = 2x + 1$. Give exact answers. $x = 1 + \sqrt{2}, y = 3 + 2\sqrt{2}$ $x = 1 - \sqrt{2}, y = 3 - 2\sqrt{2}$ exact surd pairs	j Solve $x^2 + y^2 = 13$ and $x^2 - y^2 = 5$ $x = \pm 3, y = \pm 2$ (four pairs) eliminate the squares: four pairs	k Solve $x^2 + y^2 = 20$ and $y = x^2$ $x = 2, y = 4$ $x = -2, y = 4$ reject the impossible value	l $y = x + k$ is a tangent to $x^2 + y^2 = 8$. Find the values of k . $k = 4$ or $k = -4$ a tangent: find k

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