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| **Crack the Code** | **Simultaneous Equations** |

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| **A** | Solve$$3x-2y=34$$$$5x+3y=44$$ | **B** | Solve$$2x=3y-5.5$$$$6y=5x+2.5$$ |
| **C** | Solve$$\frac{x}{4}+6=3x+y+2$$$$2y=3(6-x)$$ | **D** | Solve$$2x+y=22$$$$3xy=180$$ |
| **E** | Solve$$x^{2}+y^{2}=20$$$$2y=x$$ | **F** | Solve$$x+y=10$$$$3y^{2}-2xy=25$$ |
| **G** | Solve $$x^{2}-xy+y^{2}=49$$$$2y=x+7$$ | **H** | The solution to the pair of equations$$ax+5y=17$$$$3x-4y=b$$is $x=2a, y=-3$Find the positive values of $a$ and $b$ |
| **I** | Determine the number of points of intersection of the line $y=3-2x$ and the curve $y=3x^{2}+5x-8$  | **J** | The line $3y=kx+17$meets the curve $$x^{2}+2y^{2}=34$$at exactly one point. Find the positive value of $k$. |
| To get the three-digit code, add together all your answers. |