Must Know Questions To Ace
Linear Equations

1.	Solve the following equations. a) $-3(2x+7) = 2\,(5x-3)$ b) $\frac{3}{4}\,(\,6x-8\,) = 5\,(\,3x-\frac{5}{2}\,)$ c) $5\,(\,3m-7\,) - 2\,(\,-8+7m) = 13 - 3\,(\,6-5m\,)$
2.	Find the value of b when a) $x = 5$ is a solution of the equation $-3x + b = 17$ b) $x = -3b$ is a solution of the equation $-2x + 15 = 3b$ c) $x = 17$ is a solution of the equation $x = \frac{1}{3}\,[\,4\,(6-5b) - 7(3b+2)]$
3.	Solve the following equations. a) $\frac{2x+1}{6} - \frac{6-5x}{5} = \frac{12x-15}{10}$ b) $1 - \frac{y+1}{3y+2} = 3$
4.	a) If $\frac{5x+3y}{4x+7y} = \frac{3}{5}$, find the value of $\frac{x}{y}$. b) If $\frac{7x-4y}{3x+5y} = \frac{2}{3}$, find the ratio of $x : y$.
5.	a) If $\frac{B}{c} = 2c + \frac{4w}{a}$, find the value of w when $a = 2, c = \frac{1}{2}$, and $B = -5$. b) If $x = ut + \frac{1}{2}at^2$ and $a = \frac{v-u}{t}$, find the value of v when $x = 136\,, u = 5$ and $t = 8$

6.	Daniel is 4 times as old as his daughter, Clara, who is x years old now. Given that in 12 years time, Daniel will be $2\frac{1}{2}$ times as old as Clara, form an equation in terms of x , and hence find Daniel's age in 12 years' time.
7.	In a fraction, the denominator is 3 more than its numerator. If 4 is added to both the numerator and the denominator, the fraction becomes $\frac{11}{12}$. Form an equation to find the original fraction.

Answer Key:

1. a) $-\frac{15}{16}$

   b) $\frac{13}{21}$

   c) $m = -1$

2. a) 32

   b) 5

   c) -1

3. a) $x = -\frac{7}{2}$

   b) $y = -\frac{5}{7}$

4. a) $\frac{x}{y} = \frac{6}{13}$

   b) $x : y = 22 : 15$

5. a) $w = -\frac{11}{2}$

   b) $v = 29$

6. $4x + 12 = \frac{5}{2}(x + 12)$
   $x = 12$
   Daniel's age is 12 years time = 60 years

7. $\frac{n+4}{n+7} = \frac{11}{12}$

   $n = 29$

   Original fraction = $\frac{29}{32}$