Math44Eveieryone.con

## SUBSTITUTION

## NEGATIVES OF NEGATIVES

| A1 $a=3, b=2, c=5$ Evaluate $3 a+b c$ | A2 $d=7, e=4, f=13$ Evaluate $e(f-d)$ | A3 $x=5, y=3, z=6$ Evaluate $x^{2}-\frac{y}{z}$ | A4 $m=10, t=2$ <br> Given that $G=\frac{m}{t^{2}-1}$ <br> Find $G$ |
| :---: | :---: | :---: | :---: |
| B1 $a=2, b=6, c=-3$ <br> Evaluate $a b+2 c$ | B2 $e=-1, f=4$ <br> Evaluate $7(f-e)$ | B3 $p=-3, q=2, r=7$ <br> Evaluate $p^{2}+2 q-p r$ | B4 $p=2, q=8, r=-7$ Given that $t=p q+r$ <br> Find $t$ |
| C1 $a=-3, b=5, c=-2$ <br> Evaluate $a^{2}-b c$ | C2 $a=3, b=-4, c=-1$ <br> Evaluate $a b+b c-a c$ | C3 $p=-5, q=-4$ Evaluate $p q-\frac{p}{q}$ | C4 $a=-3, b=-8, c=-5$ Given that $M=a^{2}+\sqrt{\frac{4 b-c}{a}}$ <br> Find $M$ |
| D1 $s=-2, t=11$ <br> Given that $H=\frac{(t-3)^{2}}{s^{3}+20}$ <br> Find $H$ | D2 $a=-7, d=4, n=21$ <br> Given that $S=\frac{n}{2}[2 a+(n-1) d]$ <br> Find $S$ | D3 $a=-10, u=35, t=3$ <br> Given that $s=u t+\frac{1}{2} a t^{2}$ <br> Find $s$ | D4 $a=-3, b=7, c=-2$ <br> Given that $x=\frac{-b-\sqrt{b^{2}-4 a c}}{2 a}$ |

## SUBSTITUTION

## NEGATIVES OF NEGATIVES

Ref: G202.3

| A1 $a=3, b=2, c=5$ $\begin{aligned} 3 a+b c & =3(3)+(2)(5) \\ & =9+10 \\ & =19 \end{aligned}$ | A2 $d=7, e=4, f=13$ $\begin{aligned} e(f-d) & =4(13-7) \\ & =4 \times 6 \\ & =24 \end{aligned}$ | $\text { A3 } \begin{aligned} x=5, y=3, z & =6 \\ x^{2}-\frac{y}{z} & =(5)^{2}-\frac{3}{6} \\ & =25-0.5 \\ & =24.5 \end{aligned}$ | $\text { A4 } \begin{aligned} m=10, t & =2 \\ G & =\frac{m}{t^{2}-1} \\ & =\frac{10}{(2)^{2}-1} \\ & =3.3 \end{aligned}$ |
| :---: | :---: | :---: | :---: |
| $\text { B1 } \begin{aligned} a=2, b & =6, c=-3 \\ a b+2 c & =(2)(6)+2(-3) \\ & =12-6 \\ & =6 \end{aligned}$ | B2 $e=-1, f=4$ $\begin{aligned} 7(f-e) & =7(4--1) \\ & =7(5) \\ & =35 \end{aligned}$ | B3 $p=-3, q=2, r=7$ $\begin{aligned} p^{2}+2 q-p r & =(-3)^{2}+2(2)-(-3)(7) \\ & =9+4+21 \\ & =34 \end{aligned}$ | $\text { B4 } \begin{aligned} p=2, q & =8, r=-7 \\ t & =p q+r \\ & =(2)(8)+(-7) \\ & =16-7 \\ & =9 \end{aligned}$ |
| $\text { C1 } \begin{aligned} a=-3, b & =5, c=-2 \\ a^{2}-b c & =(-3)^{2}-(5)(-2) \\ & =9+10 \\ & =19 \end{aligned}$ | $\text { C2 } \begin{aligned} & a=3, b=-4, c=-1 \\ & \begin{aligned} a b+ & b c-a c \\ & =(3)(-4)+(-4)(-1)-(3)(-1) \\ & =-12+4+3 \\ & =-5 \end{aligned} \end{aligned}$ | $\text { C3 } \begin{aligned} p=-5, q & =-4 \\ p q-\frac{p}{q} & =(-5)(-4)-\frac{(-5)}{(-4)} \\ & =20-1.25 \\ & =18.75 \end{aligned}$ | $\text { C4 } \begin{aligned} & a=-3, b=-8, c=-5 \\ M & =a^{2}+\sqrt{\frac{4 b-c}{a}} \\ & =(-3)^{2}+\sqrt{\frac{4(-8)-(-5)}{(-3)}}=12 \end{aligned}$ |
| $\text { D1 } \begin{aligned} s & =-2, t=11 \\ h & =\frac{(t-3)^{2}}{s^{3}+20} \\ & =\frac{(11-3)^{2}}{(-2)^{3}+20}=5 . \dot{3} \end{aligned}$ | $\begin{aligned} & \text { D2 } \quad a=-7, d=4, n=21 \\ & \quad \begin{aligned} S & =\frac{n}{2}[2 a+(n-1) d] \\ & =\frac{21}{2} \times[2(-7)+(21-1)(4] \\ = & 693 \end{aligned} \end{aligned}$ | $\begin{aligned} \text { D3 } & a=-10, u=35, t=3 \\ s & =u t+\frac{1}{2} a t^{2} \\ = & (35)(3)+\frac{1}{2}(-10)(3)^{2} \quad=60 \end{aligned}$ | $\text { D4 } \begin{aligned} & a=-3, b=7, c=-2 \\ x & =\frac{-b-\sqrt{b^{2}-4 a c}}{2 a} \\ & =\frac{-(7)-\sqrt{(7)^{2}-4(-3)(-2)}}{2(-3)}=2 \end{aligned}$ |

