

## CHEMISTRY ONLINE

- TUITION -

Phone: +442081445350
www.chemistryonlinetuition.com

## Emil:asherrana@chemistryonlinetuition.com

## PURE MATH

## ALGEBRA AND FUNCTION

Level \& BoardEDEXCEL (A-LEVEL)838ChemistryOnlineTuition Ltd reserves the right to take legal action against any individual/ company/organization involved in copyright abuse.
Q. 1

As

$$
\begin{aligned}
& 3 x+y=1 \rightarrow(i) \\
& x-y=17 \rightarrow(i i)
\end{aligned}
$$

Adding (i) and (ii), we get

$$
\begin{aligned}
& 4 x=18 \\
& x=\frac{9}{2}
\end{aligned}
$$

Put in (ii)

$$
\begin{aligned}
& \frac{9}{2}-y=17 \\
& y=\frac{9}{2}-17 \\
& y=\frac{9-34}{2} \\
& y=\frac{-25}{2}
\end{aligned}
$$

Hence,

$$
\text { S. } s=\left\{\frac{9}{2}, \frac{-25}{2}\right\}
$$

## Q. 2

As

$$
\begin{aligned}
& 3 m+p=1 \rightarrow(i) \\
& m+p=2 \rightarrow(i i)
\end{aligned}
$$

Using equation (ii), we get

$$
\begin{aligned}
& m+p=2 \\
& p=2 m \rightarrow(i i i)
\end{aligned}
$$

Equation (iii) put in (i)

$$
\begin{aligned}
& 3 m+2 m=1 \\
& 2 m=-1 \\
& m=\frac{-1}{2} \quad \text { put in (iii) } \\
\Rightarrow \quad & p=2-\left(\frac{-1}{2}\right) \\
\Rightarrow \quad & P=2+\frac{1}{2} \\
\Rightarrow \quad & P=\frac{5}{2}
\end{aligned}
$$

Thus,

$$
S . S=\left\{\frac{-1}{2}, \frac{5}{2}\right\}
$$

Q. 3

As

$$
\begin{aligned}
& 3 m+17 p=25 \rightarrow(i) \\
& m+2 p=3 \rightarrow(i i)
\end{aligned}
$$

Multiply (3) $\times$ (ii) , we get

$$
3 m+6 p=9 \rightarrow(i i i)
$$

Subtract equation (i) and (iii), we get

$$
\begin{aligned}
& 11 p=16 \\
& p=\frac{16}{11} \quad \text { put in (ii) } \\
& m+2\left(\frac{16}{11}\right)=3 \\
& m+\frac{32}{11}=3 \\
& m=3-\frac{32}{11} \\
& m=\frac{33-32}{11} \\
& m=\frac{1}{11}
\end{aligned}
$$

Hence,

$$
\text { s. } s=\left\{\frac{16}{11}, \frac{1}{11}\right\}
$$

## Q. 4

As

$$
\begin{aligned}
& x+5 y=1 \rightarrow(i) \\
& x+4 y=7 \rightarrow(i i)
\end{aligned}
$$

Subtract (i) and (ii) we get

$$
y=-6
$$

Put in (ii)

$$
\begin{aligned}
& x+4 y=7 \\
& x+4(-6)=7 \\
& x-24=7 \\
& x=7+24 \\
& x=31
\end{aligned}
$$

Hence,

$$
\text { s. } s=\{31,-6\}
$$

Q. 5

Let

$$
\begin{aligned}
& 3 p+2 m=1 \rightarrow(i) \\
& p+m=21 \rightarrow(i i)
\end{aligned}
$$

Multiply (3) $\times$ (ii)

$$
3 p+3 m=63 \rightarrow(i i i)
$$

Sub (i) and (iii), we get

$$
\begin{aligned}
\Rightarrow & -m=-62 \\
\Rightarrow & m=62 \quad \text { put in (ii) } \\
& p+m=21 \\
& p+62=21 \\
& p=21-62 \\
& p=-41
\end{aligned}
$$

Hence,

$$
\text { s.s }=\{-41,62\}
$$

Q. 6

Let

$$
\begin{aligned}
& l+m=1 \rightarrow(i) \\
& l+2 m=7 \rightarrow(i i)
\end{aligned}
$$

Sub (i) and (ii) we get

$$
\begin{aligned}
\Rightarrow & -m=-6 \\
\Rightarrow & m=6 \quad \text { put in (i) } \\
& l+m=1 \\
& l+6=1 \\
& l=1-6 \\
& l=-5
\end{aligned}
$$

Thus,

$$
s . s=\{-5,6\}
$$

Q. 7

Let

$$
\begin{aligned}
& x+2 y=13 \rightarrow(i) \\
& 2 x+y=1 \rightarrow(i i)
\end{aligned}
$$

Multiply (2) $\times$ (ii), we get

$$
4 x+2 y=2 \rightarrow(i i i)
$$

Sub (i) and (iii), we get

$$
\begin{aligned}
\Rightarrow & -3 x=11 \\
\Rightarrow & x=\frac{-11}{3} \quad \text { put in (i) } \\
& \frac{-11}{3}+2 y=13 \\
& 2 y=13+\frac{11}{3} \\
& 2 y=\frac{39+11}{3}=\frac{50}{3} \\
& y=\frac{25}{3}
\end{aligned}
$$

So,

$$
\text { s.s }=\left\{\frac{-11}{3}, \frac{25}{3}\right\}
$$

Q. 8

Let

$$
\begin{aligned}
& l+m=20 \rightarrow(i) \\
& 2 l+m=10 \rightarrow(i i)
\end{aligned}
$$

Sub (i) and (ii) we get

$$
\begin{aligned}
& -l=10 \\
& l=10
\end{aligned}
$$

Put in (i)

$$
\begin{aligned}
& -10+m=20 \\
& m=20+10 \\
& m=30
\end{aligned}
$$

So,

$$
\text { s. } s=\{-10,30\}
$$



- Founder \& CEO of Chemistry Online Tuition Ltd.
- Tutoring students in UK and worldwide since 2008
- CIE \& EDEXCEL Examiner since 2015
- Chemistry, Physics, and Math's Tutor


## CONTACT INFORMATION FOR

 CHEMISTRY ONLINE TUITION- UK Contact: 02081445350
- International Phone/WhatsApp: 00442081445350
- Website: WWw.chemistryonlinetuition.com
- Email: asherrana@chemistryonlinetuition.com

Address: 210-Old Brompton Road, London SW5 OBS, UK

