

Tutorial 7 solutions

1.

$$\frac{1}{\sqrt{26}} \begin{bmatrix} -1 \\ 5 \end{bmatrix}$$

2.

$$\mathbf{S}_V = \begin{bmatrix} -4 \\ 0 \end{bmatrix} \quad \mathbf{V}_I = \begin{bmatrix} -4 \\ 20 \end{bmatrix} \quad (\text{using the reciprocal projection formula})$$

3.

$$\mathbf{S}_H = \begin{bmatrix} 0 \\ 3 \end{bmatrix} \quad \mathbf{H}_I = \begin{bmatrix} -3 \\ 5 \\ 3 \end{bmatrix} \quad (\text{using the reciprocal projection formula})$$

4.

$$\mathbf{S}_V = \begin{bmatrix} -10 \\ 0 \end{bmatrix} \quad \mathbf{V}_S = \begin{bmatrix} -10 \\ 50 \end{bmatrix} \quad (\text{using the reciprocal projection formula})$$

5.

$$\mathbf{S}_H = \begin{bmatrix} 0 \\ 10 \end{bmatrix} \quad \mathbf{H}_S = \begin{bmatrix} -2 \\ 10 \end{bmatrix} \quad (\text{using the reciprocal projection formula})$$

6.

$$\mathbf{R}_V = \mathbf{V}_I + 2\mathbf{V}_S \\ \mathbf{R}_V = \begin{bmatrix} -24 \\ 120 \end{bmatrix}$$

7.

$$\mathbf{R}_H = \mathbf{H}_I + 2\mathbf{H}_S \\ \mathbf{R}_H = \begin{bmatrix} -23 \\ 5 \\ 23 \end{bmatrix}$$

8.

120 and 23