Tutorial Assignment 1 Solutions

Question 1

```
A = {{1, -2, -1, 1, -1}, {2, -4, -2, 5, 1}, {2, -4, -1, 4, 1}, {-1, 2, 3, 2, 6}};

RowReduce[A] // MatrixForm
```

$$\begin{pmatrix} 1 & -2 & 0 & 0 & -1 \\ 0 & 0 & 1 & 0 & 1 \\ 0 & 0 & 0 & 1 & 1 \\ 0 & 0 & 0 & 0 & 0 \end{pmatrix}$$

Question 2

```
B = {{2, 4, 1, -3, -3, -5}, {1, 2, 0, 1, -1, -1}};

RowReduce[B] // MatrixForm
```

$$\begin{pmatrix} 1 & 2 & 0 & 1 & -1 & -1 \\ 0 & 0 & 1 & -5 & -1 & -3 \end{pmatrix}$$

Question 3

```
Det[{{1, 2, 3}, {4, 5, 6}, {7, 8, 9}}]
```

```
0
```

```
Det[{{1, 0, 1, 2}, {1, 3, 0, 2}, {-2, 3, 1, 0}, {1, 0, 0, 6}}]
```

```
60
```

Question 4

```
Det[{{5, -2, 3}, {0, 1, 7}, {2, -1, 0}}]
```

```
1
```

```
Inverse[{{5, -2, 3}, {0, 1, 7}, {2, -1, 0}}] // MatrixForm
```

$$\begin{pmatrix} 7 & -3 & -17 \\ 14 & -6 & -35 \\ -2 & 1 & 5 \end{pmatrix}$$

Question 5

In[1]:=
```
Det[{{1, -1, -3}, {-1, 2, 5}, {2, 1, h}}]
```

Out[1]=
```
h
```

h = 0