Maths Tasks – Pre-Session Exam | 9/13/2019

1.1. **Z^26**

1.2. **X = 2**

1.3. **1/81**

1.4. **2**

1.5. **a) TRUE b) TRUE c) FALSE d) FALSE**

1.6. **X >= e^e**

2.1. **x = -40**

2.2. **y = 4**

2.3. **x = 0 or x = 6**

2.4. **37 years**

2.5. **-5**

3.1. **2.68**

3.2. **10**

3.3. **12**

3.4. **(3x^6 – 5x^4 – 6x)/(x^2 – 1)^2**

3.5. **72x^7**

3.6. **No, because at zero the denominator becomes 0 which causes 1/x to become undefined.**

3.7. **Local Maxima x = +1 and Local Minima x = -1**

3.8. **-1**

3.9.  **For all (x, y) belong to set of real numbers: x > 3y**

3.10. **5(x^4)(y^7) + 2x/(y^3)**

3.11.

3.12. x = 18/5 and y = 18/10

4.1. **{(9, 11), (55, 76)}**

4.2. **{(46, 23, 6), (2, 1, 2), (12, 6, 4)}**

4.3. **{(e, 2, 4), (93, 6.1, π), (4.7, 4.22, 0)}**

4.4. **Determinant = 4**

5.1.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **1** | **2** | **3** | **4** | **5** | **6** |
| **1** | **1, 1** | **1, 2** | **1, 3** | **1, 4** | **1, 5** | **1, 6** |
| **2** | **2, 1** | **2, 2** | **2, 3** | **2, 4** | **2, 5** | **2, 6** |
| **3** | **3, 1** | **3, 2** | **3, 3** | **3, 4** | **3, 5** | **3, 6** |
| **4** | **4, 1** | **4, 2** | **4, 3** | **4, 4** | **4, 5** | **4, 6** |
| **5** | **5, 1** | **5, 2** | **5, 3** | **5, 4** | **5, 5** | **5, 6** |
| **6** | **6, 1** | **6, 2** | **6, 3** | **6, 4** | **6, 5** | **6, 6** |

**Total outcomes = 36**

5.2. **24.6%**

5.3.