**Order of Operations B**

**Section A:**

1. 5 + 3² × 20

Example

= (2 × 3)² ÷ 2 × 3²

= 6² ÷ 2 × 3²

= 36 ÷ 2 × 9

= 18 × 9

= 162

1. (3 × 4)² – 13
2. 3 3 × 4 ÷ 6
3. (20 - 15) ² ÷ 5
4. 5 × (9 – 6) ² + 11
5. 5 – 18 ÷ 6
6. (5 × 4)² + 2 × 33
7. 5 × (4 + 2) ² × 3
8. 5 × (2² + 2 × 33)
9. 120 ÷ (7 + 3 × 5 + 4 ÷ 2)

**Section B: Extension:** Reverse Polish Notation – No need for brackets

Examples of how it works:

× 3 5 = 15

+ × 2 5 3 = 13

– × 4 5 ÷ 21 7 = 17

Sq + 2 3 = 25

Write the following in standard notation, and then calculate the answer.

1. – ÷ 81 3 22
2. × ÷ 18 9 7
3. ÷ 18 + 2 4
4. ÷ Sq 4 2
5. Sq × 2 3
6. + ÷ 30 5 Sq 9
7. × + ÷ 9 3 4 – × 8 2 3
8. ÷ Sq 8 – 13 × 3 3

Write the following in reverse polish notation.

1. 5 + 6  2
2. 7 – (2 x 3)
3. 7 x 2 – 3
4. (6 – 4) x 9
5. 13 – (7 x 9 – 5)
6. 13 – (7 – 5)
7. 57  (12  4) + 2
8. (2 + 3 x 5) x 4 - 1

**Section C: Missing Brackets**

Sven has missed out the brackets in these calculations.

Add them in to make the calculation correct.

1. 32  2 + 4 x 5 = 100
2. 160 + 8  2 + 10 = 14
3. 120 - 3  3 x 3 = 13
4. 5 + 3 x 17 - 6 = 130
5. 80 - 2 x 2  4 = 19
6. 16 - 2 x 7 - 8 = 90

**Order of Operations - Homework**

Calculate the following

1. 
2. 
3. 
4. 
5. 
6. 
7. 
8. 
9. 
10. 
11. 
12. 

**Optional questions**

Use the given values to calculate the following

    

1. 
2. 
3. 
4. 
5. 
6. 

Answer Box:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 33 | 98 | 144 | 31 | 4 | 605 |
| 432 | 4 | -31 | 12 | -3 | 1/4 |
| -25 | 9 | 125 | 25 | 8 | 57 |