

**Directed numbers**

Evaluate:

- a)  $-9 + 8 = -1$
- b)  $-7 - (-11) = 4$
- c)  $(-4) \times (-6) = 24$
- d)  $(15) \div (-5) = -3$
- e)  $3 \times (-2) \times (-5) = 30$

**Prime numbers**

List the prime numbers greater than 70 and less than 90:

**71, 73, 79, 83, 89**

Express as a product of primes, using indices where appropriate:

- a)  $18 = 2 \times 3^2$
- b)  $2000 = 2^4 \times 5^3$
- c)  $187 = 11 \times 17$
- d)  $273 = 3 \times 7 \times 13$

**Order of operations**

Evaluate:

- a)  $2 \times 5 + 3 \times 4 = 22$
- b)  $19 - 5^2 + 6 = 0$
- c)  $(2^4 - 10) \div 2 = 3$
- d)  $(1 - 4)^2 - (2 - 6)^2 = -7$
- e)  $3^2 \times 7 + 10 \div 5 = 65$

**Standard form**

Write as an ordinary number:

- a)  $4.1 \times 10^4 = 41000$
- b)  $8.6 \times 10^{-5} = 0.000086$
- c)  $2.003 \times 10^{-2} = 0.02003$
- e)  $0.0000012 = 1.2 \times 10^{-6}$
- f)  $607.38 = 6.0738 \times 10^2$

Write in standard form:

- d)  $57004 = 5.7004 \times 10^4$
- g)  $103.2 \times 10^{-4} = 1.03 \times 10^{-2}$
- h)  $0.088 \times 10^{-3} = 8.8 \times 10^{-5}$

**Comparing numbers**

Rewrite in ascending order:

- a) 19.1, 19.9, 11.9, 11.01, 19.09  
**11.01, 11.9, 19.09, 19.1, 19.9**
- b) 0.3, 0.32, 0.003, 0.03, 0.303  
**0.003, 0.03, 0.3, 0.303, 0.32**

Rewrite in descending order:

- c) -9.9, -9.2, -2.3, 3.2, -2.7  
**3.2, -2.3, -2.7, -9.2, -9.9**
- d) 4010, 4110, 4001, 4011, 4101  
**4110, 4101, 4011, 4010, 4001**

Use =, &lt;, or &gt; to compare the numbers:

- e)  $40.14 > 40.104$
- f)  $0.6102 < 0.67$
- g)  $-0.112 > -0.12$

**Highest common factor**

Find the highest common factor of:

- a) 12 and 28 = **4**
- b) 54 and 81 = **27**
- c) 36, 60 and 96 = **12**

**Lowest common multiple**

Find the lowest common multiple of:

- a) 6 and 14 = **42**
- b) 18 and 27 = **54**
- c) 15, 20 and 35 = **420**

**Calculation**

Use a handwritten method to calculate:

- a)  $186 - 239 + 78 = 25$
- b)  $56 \times 73 = 4088$
- c)  $17 \times 392 = 6664$
- d)  $14214 \div 23 = 618$

**Calculations using standard form**

Evaluate, writing your answer in standard form:

- a)  $(2.5 \times 10^5) + (6.3 \times 10^4) = 3.13 \times 10^5$
- b)  $(4.27 \times 10^6) - (8.1 \times 10^5) = 3.46 \times 10^6$
- c)  $(1.07 \times 10^{-2}) - (9.8 \times 10^{-3}) = 9 \times 10^{-4}$
- d)  $(7 \times 10^2) \times (8 \times 10^4) = 5.6 \times 10^7$
- e)  $(2.4 \times 10^3) \div (9.6 \times 10^7) = 2.5 \times 10^{-5}$