**Approximation, Estimating**

**Rounding Off – a Reminder**

1. Round each of these populations (2013 figures1) to the nearest million;
2. London 7,825,200
3. NYC 8,336,697
4. Beijing 19,612,368
5. UK 63,134,171
6. USA 315,183,801
7. China 1,362,391,579
8. Round each of these calories to the nearest hundred
9. 623
10. 871
11. 1,244
12. 3,487
13. 8,885
14. 4,082
15. 16,734
16. 35,971
17. 12,986
18. 850,066
19. Round each of these numbers to 1 decimal place
20. 0.872
21. 0.316
22. 0.5984
23. 7.362
24. 5.083
25. 7.775
26. 1.058
27. 92.983
28. 48.967
29. 51.949
30. Round…
31. 6.2732 to 2dp
32. 69,287 to the nearest hundred
33. 45,967 to the nearest hundred
34. 0.08362 to 1dp
35. 5.680 km to the nearest 0.1 km
36. 5.8967 m to the nearest m

**Significant figures in numbers greater than 1**

1. Round each of these salaries2 to 1 significant figure
2. Bar staff £6,054
3. Beautician £12,461
4. Refuse Collector £18,031
5. Traffic Warden £22,246
6. Nurse £26, 456
7. Vet £32,469
8. Paramedic £36, 542
9. Police Officer £38,570
10. Pilot £63,664
11. Director & CEO £212,910
12. Round each of these numbers to 2 sig figs
13. 3,814
14. 7,281
15. 40,862
16. 70,099
17. 994,999
18. Round each of these to 3 sf
19. 458,127
20. 26,597
21. 44,529
22. 30,086
23. 70,205
24. 108,952
25. 86,371
26. 436,925
27. 784,274
28. 99,993

**Significant figures in decimals**

1. Copy down each of these numbers and underline the first significant figure (do not round these numbers for now)
2. 0.04137
3. 0.00684
4. 3.0082
5. 17.6039
6. 0.05023
7. 1.00937
8. 0.00871
9. 0.93026
10. Now go back and round each of the numbers in the previous question to 1 sf.
11. Round each of these numbers to 1 sf
12. 0.06712
13. 0.00837
14. 82.984
15. 0.0004605
16. Round each of these numbers to 2 sf
17. 0.29385
18. 37.2647
19. 0.081937
20. 0.001072
21. 0.200873
22. 162.0583
23. 0.075207
24. 0.060803
25. Round each of these numbers to 2 sf
26. 27.732
27. 145.0381
28. 6.00954
29. 0.00325831
30. Round…
31. 3.729 to 2 sf
32. 0.3729 to 2 sf
33. 3.729 to 1 sf
34. 0.0954 to 2 sf
35. 1.0954 to 3 sf
36. 0.006872 to 2 sf

**Calculations**

1. By firstly rounding each of these figures to one significant figure and then using your rounded values, make estimates for the answers to each of these calculations;
2. 7.38 × 1.56
3. 14.92 × 9.61
4. 12.03 × 0.0864
5. 51.36 ÷ 24.9
6. 0.872 ÷ 2.1
7. 150.63 ÷ 49.01

1 <http://worldpopulationreview.com>

2 <http://www.thisismoney.co.uk/money/article-1709243/UK-salaries-2010-301-427-highest-salaries.html#ixzz1eTLcAWVL>

**Approximation, Estimating - Answers**

**Rounding Off – a Reminder**

1. Round each of these populations (2013 figures) to the nearest million;
2. London 8 000 000
3. NYC 8 000 000
4. Beijing 20 000 000
5. UK 63 000 000
6. USA 315 000 000
7. China 1 362 000 000
8. Round each of these numbers to the nearest hundred
9. 600
10. 900
11. 1 200
12. 3 500
13. 8 900
14. 4 100
15. 16 700
16. 36 000
17. 13 000
18. 850 100
19. Round each of these numbers to 1 decimal place
20. 0.9
21. 0.3
22. 0.6
23. 7.4
24. 5.1
25. 7.8
26. 1.1
27. 93.0
28. 49.0
29. 51.9
30. Round…
31. 6.27
32. 69 300
33. 46 000
34. 0.1 to 1dp
35. 5.7 km
36. 6 m

**Significant figures in numbers greater than 1**

1. Round each of these numbers to 1 significant figure
2. 6 000
3. 10 000
4. 20 000
5. 20 000
6. 30 000
7. 30 00000
8. 40 000
9. 40 000
10. 60 000
11. 200 000
12. Round each of these numbers to 2 sig figs
13. 3 800
14. 7 300
15. 41 000
16. 70 000
17. 990 000
18. Round each of these to 3 sf
19. 458 000
20. 26 600
21. 44 500
22. 30 100
23. 70 200
24. 109 000
25. 86 3400
26. 437 000
27. 784 000
28. 100 000

**Significant figures in decimals**

1. Copy down each of these numbers and underline the first significant figure (do not round these numbers for now)
2. 0.04137
3. 0.00684
4. 3.0082
5. 17.6039
6. 0.05023
7. 1.00937
8. 0.00871
9. 0.93026
10. Now go back and round each of the numbers in the previous question to 1 sf.
11. Round each of these numbers to 1 sf
12. 0.06712
13. 0.00837
14. 82.984
15. 0.0004605
16. Round each of these numbers to 2 sf
17. 0.29385
18. 37.2647
19. 0.081937
20. 0.001072
21. 0.200873
22. 162.0583
23. 0.075207
24. 0.060803
25. Round each of these numbers to 2 sf
26. 27.732
27. 145.0381
28. 6.00954
29. 0.00325831
30. Round…
31. 3.729 to 2 sf
32. 0.3729 to 2 sf
33. 3.729 to 1 sf
34. 0.0954 to 2 sf
35. 1.0954 to 3 sf
36. 0.006872 to 2 sf

**Calculations**

1. By firstly rounding each of these figures to one significant figure and then using your rounded values, make estimates for the answers to each of these calculations;
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4. 12.03 × 0.0864
5. 51.36 ÷ 24.9
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