Rounding

Foundation and Higher tier | Written solutions

DECIMAL PLACES

Question 1 - Round to 1 decimal place

(a) 4.76 → 4.8. The next decimal digit is 6, so round up.

(b) 12.34 → 12.3. The next decimal digit is 4, so keep the last retained digit.

(c) 0.875 → 0.9. The next decimal digit is 7, so round up.

(d) 105.65 → 105.7. The next decimal digit is 5, so round up.

(e) 0.047 → 0.0. The next decimal digit is 4, so keep the last retained digit.

(f) 32.91 → 32.9. The next decimal digit is 1, so keep the last retained digit.

Question 2 - Round to 2 decimal places

(a) 3.456 → 3.46. The next decimal digit is 6, so round up.

(b) 18.546 → 18.55. The next decimal digit is 6, so round up.

(c) 0.374 → 0.37. The next decimal digit is 4, so keep the last retained digit.

(d) 52.046 → 52.05. The next decimal digit is 6, so round up.

(e) 0.876 → 0.88. The next decimal digit is 6, so round up.

(f) 172.199 → 172.20. The next decimal digit is 9, so round up.

Question 3 - Round to 3 decimal places

(a) 7.1236 → 7.124. The next decimal digit is 6, so round up.

(b) 0.45678 → 0.457. The next decimal digit is 7, so round up.

(c) 28.9114 → 28.911. The next decimal digit is 4, so keep the last retained digit.

(d) 0.0965 → 0.097. The next decimal digit is 5, so round up.

(e) 104.0159 → 104.016. The next decimal digit is 9, so round up.

(f) 86.0999 → 86.100. The next decimal digit is 9, so round up.

ROUNDING TO A MULTIPLE

Question 4 - Round to the nearest 10

(a) 347 → 350. 347 lies between 340 and 350; 350 is nearer.

(b) 1285 → 1290. 1285 lies between 1280 and 1290; it is halfway, so round up.

(c) 9996 → 10000. 9996 lies between 9990 and 10000; 10000 is nearer.

(d) 54.8 → 50. 54.8 lies between 50 and 60; 50 is nearer.

(e) 8.64 → 10. 8.64 lies between 0 and 10; 10 is nearer.

(f) 348213 → 348210. 348213 lies between 348210 and 348220; 348210 is nearer.

Question 5 - Round to the nearest 100

(a) 5421 → 5400. 5421 lies between 5400 and 5500; 5400 is nearer.
(b) 28650 → 28700. 28650 lies between 28600 and 28700; it is halfway, so round up.
(c) 999569 → 999600. 999569 lies between 999500 and 999600; 999600 is nearer.
(d) 736.4 → 700. 736.4 lies between 700 and 800; 700 is nearer.
(e) 89.9 → 100. 89.9 lies between 0 and 100; 100 is nearer.
(f) 2000999 → 2001000. 2000999 lies between 2000900 and 2001000; 2001000 is nearer.

Question 6 - Round to the nearest 1000

(a) 6829 → 7000. 6829 lies between 6000 and 7000; 7000 is nearer.
(b) 4950 → 5000. 4950 lies between 4000 and 5000; 5000 is nearer.
(c) 12349 → 12000. 12349 lies between 12000 and 13000; 12000 is nearer.
(d) 999.6 → 1000. 999.6 lies between 0 and 1000; 1000 is nearer.
(e) 19999 → 20000. 19999 lies between 19000 and 20000; 20000 is nearer.
(f) 9678 → 10000. 9678 lies between 9000 and 10000; 10000 is nearer.

Question 7 - Round to the nearest 5

(a) 37 → 35. 37 lies between 35 and 40; 35 is nearer.
(b) 82 → 80. 82 lies between 80 and 85; 80 is nearer.
(c) 124 → 125. 124 lies between 120 and 125; 125 is nearer.
(d) 15.8 → 15. 15.8 lies between 15 and 20; 15 is nearer.
(e) 0.7 → 0. 0.7 lies between 0 and 5; 0 is nearer.
(f) 999 → 1000. 999 lies between 995 and 1000; 1000 is nearer.

SIGNIFICANT FIGURES

Question 8 - Round to 1 significant figure

(a) 47 → 50. The next significant digit is 7, so round up.
(b) 382 → 400. The next significant digit is 8, so round up.
(c) 0.064 → 0.06. The next significant digit is 4, so keep the last retained digit.
(d) 5926 → 6000. The next significant digit is 9, so round up.
(e) 0.00981 → 0.01. The next significant digit is 8, so round up.
(f) 0.0105 → 0.01. The next significant digit is 0, so keep the last retained digit.

Question 9 - Round to 2 significant figures

(a) 3.746 → 3.7. The next significant digit is 4, so keep the last retained digit.

(b) 628 → 630. The next significant digit is 8, so round up.

(c) 0.0478 → 0.048. The next significant digit is 8, so round up.

(d) 91250 → 91000. The next significant digit is 2, so keep the last retained digit.

(e) 0.006043 → 0.0060. The next significant digit is 4, so keep the last retained digit.

(f) 0.7081 → 0.71. The next significant digit is 8, so round up.

Question 10 - Round to 3 significant figures

(a) 18.764 → 18.8. The next significant digit is 6, so round up.

(b) 0.003456 → 0.00346. The next significant digit is 6, so round up.

(c) 507821 → 508000. The next significant digit is 8, so round up.

(d) 82.995 → 83.0. The next significant digit is 9, so round up.

(e) 0.09996 → 0.100. The next significant digit is 6, so round up.

(f) 0.000008271 → 0.00000827. The next significant digit is 1, so keep the last retained digit.