Using a Calculator

A Calculators: Fractions

Calculate:

1 $\frac{2}{5}+\frac{1}{6}+\frac{2}{7}+\frac{5}{8}$

2 $6\frac{1}{4}\times 2\frac{1}{3}\times 1\frac{1}{5}\times 2\frac{1}{6}$

3 $3\frac{1}{8}\left(4\frac{1}{3}+2\frac{1}{2}-6\frac{1}{4}\right)$

4 $\dfrac{2\frac{1}{2}+5\frac{1}{4}}{\frac{1}{2}}+\frac{3}{8}$

5 $9\frac{2}{3}\left(5\frac{1}{4}-6\frac{1}{2}+12\frac{1}{8}\right)$

6 $3\frac{1}{4}\div 2\frac{1}{5}\times 5\frac{1}{4}$

7 $\dfrac{6\frac{2}{3}-8\frac{1}{4}-\frac{5}{7}}{\frac{2}{3}}$

8 $13\frac{1}{2}\left(1\frac{1}{2}-6\frac{1}{4}+11\frac{1}{4}\right)$

9 $\dfrac{5\frac{1}{4}+3\frac{1}{8}+6\frac{1}{3}}{3\frac{1}{9}}-17\frac{1}{2}$

10 $3\frac{2}{3}+5\frac{1}{4}+6\frac{2}{3}\times\frac{3}{4}$

B Calculators: Using the memory function

Calculate to 2 decimal places:

1 $13.02\times\pi+6.04\times 3.09$

2 $14(3.8+6.3)+\dfrac{2}{\pi}$

3 $14.07^2+3\times 0.09-6.03\times 1.04$

4 $33.2^2-2.04\times 3+\dfrac{6.09}{8}$

5 $\sqrt{1.02+5.8}+6.09\times 3$

6 $3\pi+2(5.02+3.8)$

7 $\pi\left(3+\sqrt{2}\right)$

8 $\dfrac{4\pi(3.08+15.2)}{3.09}$

9 $\dfrac{15.02}{3.1}+\dfrac{\pi}{3}-11.2$

10 $\dfrac{18(4\pi+3-2)}{\sqrt{2}}$

C Calculators: Scientific notation

Calculate:

1 $3.07\times 10^{9}\times 6.03\times 10^{12}$

2 $5.097\times 10^{12}\times 3\times 10^{-13}$

3 $9.07\times 10^{6}\div 5\times 10^{-14}$

4 $1.02\times 10^{3}\times 6.03\times 10^{12}$

5 $1.83\times 10^{12}+1.58\times 10^{11}$

6 $8.04\times 10^{13}-6.04\times 10^{12}$

7 $1.381\times 10^{-11}+4.9\times 10^{-12}$

8 $1.581\times 10^{14}-3.81\times 10^{12}$

9 $1.6\times 10^{15}+3.8\times 10^{13}$

10 $1.48\times 10^{17}-3.81\times 10^{15}$

11 $3.81\times 10^{10}\times 3.9\times 10^{-13}$

12 $7.07\times 10^{11}+2\times 10^{15}$

D Calculator: Reciprocals

1 Find the reciprocal of these numbers to 3 decimal places:

(a) 15 (b) –16.3 (c) 4.09 (d) 1.083

(e) –5.3

2 Use the reciprocal function to help calculate these to 3 decimal places:

(a) $\dfrac{5}{6+2\pi}$ (b) $\dfrac{\sqrt{2}}{5-2\sqrt{11}}$ (c) $\dfrac{5\pi}{7(2+\pi)}$ (d) $\dfrac{8}{\pi+\sqrt{8}}$

(e) $\dfrac{\sqrt{2}}{5+\pi+11.8}$ (f) $\dfrac{12}{3\pi+\sqrt{17}}$ (g) $\dfrac{2}{16\left(3\sqrt{2}+\pi\right)}$

E Calculators: Trigonometric functions

Find the angles expressed in degree/min form:

1 $\sin a = 0.2138$

2 $\cos a = 0.1238$

3 $\tan a = 1.2148$

4 $\cos a = 0.0314$

5 $\sin a = 0.1318$

6 $\tan a = 2.0314$

7 $\cos a = 0.6214$

8 $\sin a = 0.2643$

9 $\tan a = 6.3142$

10 $\sin a = 0.8142$

11 $\cos a = 0.4104$

12 $\tan a = 0.2314$

F Calculators: Raising a number to a power

Calculate to three decimal places:

1 $5^{0.2}$	**2** 0.6^{3}	**3** $9^{2.9}$	**4** $3.09^{0.2}$
5 $18.2^{0.2}$	**6** $1.08^{2.1}$	**7** $4.2^{0.3}$	**8** $5.8^{1.2}$
9 $-(3.2)^{0.7}$	**10** $2.81^{0.3}$	**11** $91.42^{1.8}$	**12** $-(0.04)^{2}$
13 $5.21^{2.1}$	**14** $19.21^{1.5}$	**5** $9.02^{4.3}$	**16** $16.3^{0.8}$
17 $9.04^{0.2}$	**18** $21^{1.38}$		

G Calculators: Finding the *n*th root of a number

Find the fourth root, seventh root, eleventh root and twentieth root of the following to 3 decimal places:

{17, 18, 2.3, 1.04, 17.38, 951, 20.013}

H Calculators: Using the statistical functions

The following are test scores (%) in the latest geometry test by a group of students:

{93, 81, 42, 58, 63, 42, 93, 63, 58, 47, 38, 21, 74, 79, 82, 83, 42, 63, 73, 81, 38, 83, 92, 15, 63}

Use the statistical function on the calculator to find the:

1 mean **2** standard deviation of test scores.

Calculator Answers

A

1 $1\frac{401}{840}$	**2** $37\frac{11}{12}$	**3** $1\frac{79}{96}$
4 $15\frac{7}{8}$	**5** $105\frac{1}{8}$	**6** $7\frac{133}{176}$
7 $-3\frac{25}{56}$	**8** $87\frac{3}{4}$	**9** $-12\frac{173}{224}$
10 $13\frac{11}{12}$		

B

1 59.57	**2** 142.04	**3** 191.96
4 1096.88	**5** 20.88	**6** 27.06
7 13.87	**8** 74.34	**9** –5.31
10 172.67		

C

1 $1.851\,21 \times 10^{22}$	**2** 1.5291
3 1.814×10^{20}	**4** 6.1506×10^{15}
5 1.988×10^{12}	**6** 7.436×10^{13}
7 1.871×10^{-11}	**8** 1.5429×10^{14}
9 1.638×10^{15}	**10** 1.4419×10^{17}
11 0.014 859	**12** 3.535×10^{-4}

D

1	(a) 0.067	(b) –0.061	(c) 0.244
	(d) 0.923	(d) –0.189	
2	(a) 0.407	(b) –0.866	(c) 0.436
	(d) 1.340	(e) 0.071	(f) 0.886
	(g) 0.017		

E

1	12°21'	**2**	82°53'	**3**	50°32'
4	88°12'	**5**	7°34'	**6**	63°47'
7	51°35'	**8**	15°20'	**9**	81°0'
10	54°31'	**11**	65°46'	**12**	13°2'

F

1	1.380	**2**	0.216	**3**	585.199
4	1.253	**5**	1.787	**6**	1.175
7	1.538	**8**	8.244	**9**	–2.257
10	1.363	**11**	3387.460	**12**	–0.002
13	32.015	**14**	84.196	**15**	12 805.251
16	9.327	**17**	1.553	**18**	66.782

G

	$\sqrt[4]{}$	$\sqrt[7]{}$	$\sqrt[11]{}$	$\sqrt[20]{}$
17	2.031	1.499	1.294	1.152
18	2.060	1.511	1.301	1.155
2.3	1.231	1.126	1.079	1.043
1.04	1.010	1.006	1.004	1.002
17.38	2.042	1.504	1.296	1.153
951	5.553	2.664	1.865	1.409
20.013	2.115	1.534	1.313	1.1162

H

1	62.68	**2**	22.24