

# Using a Calculator

## A Calculators: Fractions

Calculate:

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

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

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

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

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

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

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

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

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

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

## B Calculators: Using the memory function

Calculate to 2 decimal places:

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

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

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

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

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

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

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

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

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

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

## C Calculators: Scientific notation

Calculate:

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

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

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

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

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

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

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

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

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

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

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

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

## 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)  $\frac{5}{6 + 2\pi}$

(b)  $\frac{\sqrt{2}}{5 - 2\sqrt{11}}$

(c)  $\frac{5\pi}{7(2 + \pi)}$

(d)  $\frac{8}{\pi + \sqrt{8}}$

(e)  $\frac{\sqrt{2}}{5 + \pi + 11.8}$

(f)  $\frac{12}{3\pi + \sqrt{17}}$

(g)  $\frac{2}{16(3\sqrt{2} + \pi)}$

## E Calculators: Trigonometric functions

Find the angles expressed in degree/min form:

$$1 \quad \sin a = 0.2138$$

$$2 \quad \cos a = 0.1238$$

$$3 \quad \tan a = 1.2148$$

$$4 \quad \cos a = 0.0314$$

$$5 \quad \sin a = 0.1318$$

$$6 \quad \tan a = 2.0314$$

$$7 \quad \cos a = 0.6214$$

$$8 \quad \sin a = 0.2643$$

$$9 \quad \tan a = 6.3142$$

$$10 \quad \sin a = 0.8142$$

$$11 \quad \cos a = 0.4104$$

$$12 \quad \tan a = 0.2314$$

### **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  | $1.85121 \times 10^{22}$ | 2  | 1.5291                  |
| 3  | $1.814 \times 10^{20}$   | 4  | $6.1506 \times 10^{15}$ |
| 5  | $1.988 \times 10^{12}$   | 6  | $7.436 \times 10^{13}$  |
| 7  | $1.871 \times 10^{-11}$  | 8  | $1.5429 \times 10^{14}$ |
| 9  | $1.638 \times 10^{15}$   | 10 | $1.4419 \times 10^{17}$ |
| 11 | 0.014859                 | 12 | $3.535 \times 10^{-4}$  |

- 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  | $12^{\circ}21'$ | 2  | $82^{\circ}53'$ | 3  | $50^{\circ}32'$ |
| 4  | $88^{\circ}12'$ | 5  | $7^{\circ}34'$  | 6  | $63^{\circ}47'$ |
| 7  | $51^{\circ}35'$ | 8  | $15^{\circ}20'$ | 9  | $81^{\circ}0'$  |
| 10 | $54^{\circ}31'$ | 11 | $65^{\circ}46'$ | 12 | $13^{\circ}2'$  |

- 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 | 12805.251 |
| 16 | 9.327  | 17 | 1.553    | 18 | 66.782    |

**G**

	$\sqrt[4]{\phantom{x}}$	$\sqrt[3]{\phantom{x}}$	$\sqrt[4]{\phantom{x}}$	$2\sqrt{\phantom{x}}$
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 |
|---|-------|---|-------|