

## Exercise 2D

- |                        |                     |
|------------------------|---------------------|
| (a) (i) 3              | (ii) 2              |
| (b) (i) 1              | (ii) 1              |
| (c) (i) 0              | (ii) 0              |
| (d) (i) -1             | (ii) -3             |
| (e) (i) $\frac{1}{2}$  | (ii) $\frac{1}{3}$  |
| (f) (i) $\frac{1}{2}$  | (ii) $\frac{1}{2}$  |
| (g) (i) $\frac{2}{3}$  | (ii) $\frac{3}{4}$  |
| (h) (i) $\frac{3}{2}$  | (ii) $\frac{5}{4}$  |
| (i) (i) $\frac{3}{4}$  | (ii) $\frac{9}{4}$  |
| (j) (i) $-\frac{1}{2}$ | (ii) $-\frac{1}{2}$ |
- |               |             |
|---------------|-------------|
| (a) (i) 1.70  | (ii) -0.602 |
| (b) (i) -2.30 | (ii) 2.30   |
- |   |                   |
|---|-------------------|
| (a) (i) $5 \log x$                              | (ii) $5 \log x$   |
| (b) (i) $\log x \log y - \log y + 3 \log x - 3$ |                   |
| (ii) $(\log x)^2 + 4 \log x + 4$                |                   |
| (c) (i) $\frac{1}{\log b} + \frac{1}{\log a}$   | (ii) $\log a + 1$ |
- |                            |                     |
|----------------------------|---------------------|
| (a) (i) $x = 3^y$          | (ii) $x = 16^y$     |
| (b) (i) $x = a^{y+1}$      | (ii) $x = a^{y^2}$  |
| (c) (i) $x = \sqrt[3]{3y}$ | (ii) $x = \sqrt{y}$ |
- |             |           |
|-------------|-----------|
| (a) (i) 32  | (ii) 16   |
| (b) (i) 0.4 | (ii) 0.25 |
| (c) (i) 6   | (ii) 100  |
- $x = 111$
- $x = -3$
- $x = \frac{e^2 + 1}{3}$
- $9, \frac{1}{9}$
- $x = 10^{1.5} = 31.6$
- $x = \sqrt[3]{4} = 1.17$
- $x = 81, y = 25$
- 5.50

## Exercise 2E

- |           |                    |
|-----------|--------------------|
| (a) (i) 4 | (ii) $\frac{1}{2}$ |
| (b) (i) 6 | (ii) $\frac{3}{2}$ |
- |                      |                    |
|----------------------|--------------------|
| (a) (i) $y + z$      | (ii) $z - x$       |
| (b) (i) $3x$         | (ii) $5y$          |
| (c) (i) $z + 7y$     | (ii) $2x + y$      |
| (d) (i) $x + 2y - z$ | (ii) $2x - y - 3z$ |
| (e) (i) $2 - y - 5z$ | (ii) $1 + y + 2z$  |
- |                                       |                          |
|---------------------------------------|--------------------------|
| (a) (i) $x = \frac{13}{7}$            | (ii) $x = 4$             |
| (b) (i) $x = 9$                       | (ii) $x = 2$             |
| (c) (i) $x = \frac{1}{4}$             | (ii) $x = 8$             |
| (d) (i) $x = 2^{\frac{12}{5}} = 5.28$ | (ii) $x = 2^{10} = 1024$ |
| (e) (i) $x = 8$                       | (ii) $x = 4$             |
| (f) (i) $x = \frac{1}{3}$             | (ii) $x = 8$             |
- $x = \frac{1}{3}e^{\frac{1}{2}}$
- |              |                |
|--------------|----------------|
| (a) $a + 2b$ | (b) $2(a - b)$ |
|--------------|----------------|
- $x = 2, \frac{1}{2}$
- |              |                       |
|--------------|-----------------------|
| (a) $x - 4y$ | (b) $2 + 2x + y + 2z$ |
|--------------|-----------------------|
- 1
- |                       |                            |
|-----------------------|----------------------------|
| (a) $2 + \frac{y}{x}$ | (b) $\frac{x + 2z}{x + y}$ |
|-----------------------|----------------------------|
- |   |                                   |
|---|-----------------------------------|
| (a) $\frac{x - y - z}{y} = \frac{x - z}{y} - 1$ | (b) $\frac{y}{x} \times 10^{x-y}$ |
|---|-----------------------------------|