

## Fractional Indices

### Workout

#### Question 1

- (a) 5 (b) 9 (c) 2 (d) 12 (e) 2 (f) 5 (g) 10 (h) 10 (i) 7 (j) 15 (k) 8 (l) 3  
(m) 6 (n) 4 (o) 2 (p) 1 (q) 3 (r) 5

#### Question 2

- (a)  $x^{\frac{1}{2}}$  (b)  $y^{\frac{1}{2}}$  (c)  $a^{\frac{1}{3}}$  (d)  $y^{\frac{1}{4}}$  (e)  $x^{\frac{1}{6}}$  (f)  $c^{\frac{1}{8}}$

#### Question 3

- (a) 27 (b) 8 (c) 4 (d) 9 (e) 25 (f) 343 (g) 32 (h) 16 (i) 243 (j) 1000  
(k) 64 (l) 100 (m) 100,000 (n) 4 (o) 128 (p) 32 (q) 8 (r) 27 (s) 8  
(t) 243 (u) 32 (v) 1000

#### Question 4

- (a)  $a^{\frac{3}{2}}$  (b)  $w^{\frac{5}{2}}$  (c)  $x^{\frac{2}{3}}$  (d)  $w^{\frac{4}{3}}$  (e)  $m^{\frac{2}{5}}$  (f)  $k^{\frac{4}{9}}$

#### Question 5

- (a)  $9^2$  (b)  $9^{\frac{1}{2}}$  (c)  $9^{\frac{3}{2}}$

#### Question 6

- (a)  $64^{\frac{1}{2}}$  (b)  $64^{\frac{1}{3}}$  (c)  $64^{\frac{2}{3}}$

#### Question 7

- (a)  $7x$  (b)  $2x^2$  (c)  $5x^4$  (d)  $2x^{\frac{3}{2}}$  (e)  $2x$  (f)  $5x^2$

#### Question 8

- (a)  $16x^2$  (b)  $27x^6$  (c)  $9x^4$  (d)  $32x^{15}$  (e)  $8x^6$  (f)  $8x^{12}$

#### Question 9

- (a)  $\frac{1}{4}$  (b)  $\frac{1}{125}$  (c)  $\frac{1}{16}$  (d)  $\frac{1}{32}$  (e)  $\frac{1}{27}$  (f)  $\frac{1}{100}$

## Apply

Question 1

$$27^{\frac{1}{3}}, 8^{\frac{2}{3}}, 25^{\frac{1}{2}}$$

Question 2

$9^{\frac{2}{3}}$  as it is the only one not equal to 8

Question 3

(a) 32      (b)  $\frac{1}{3}$       (c) 16

## Question 4

Question 1 – They worked out what half of 9 was instead of raising 9 to the power of a half

Question 2 – They divided 27 by 3 and multiplied by 2