

1. Write as a product as prime factors. Give your answer in index form.

a. 18

b. 50

c. 24

d. 72

e. 80

f. 96

g. 150

h. 126

i. 200

j. 550

k. 729

l. 1050

2. Given the prime factor decomposition, find the number

a. $2 \times 3 \times 5 \times 7$

b. $2^4 \times 5^2$

c. $3^2 \times 5^2 \times 11$

d. $2^4 \times 3^2 \times 5$

e. $2 \times 5^2 \times 7^2 \times 11$

3. Given the prime factor decomposition, find the prime factor decomposition of the new number

a. If $V = 2^a \times 3^b$, find $3V$

b. If $W = 2^a \times 5^b$, find $10W$

c. If $X = 3^a \times 5^b \times 7$, find X^2

d. If $Y = 3^a \times 5^b$, find $2Y^2$

4. Explain, using prime factors, why...

a. ...144 is a square number

b. ...216 is a cube number

c. ...64 can be both a square and cube number

5. Decide whether the following are square numbers, cube numbers or neither

a. $2^2 \times 3^2 \times 5^2$

b. $2^2 \times 3^2 \times 5^3$

c. $2^4 \times 3^4 \times 5^4$

d. $2^5 \times 3^5 \times 5^5$

e. $2^6 \times 3^6 \times 5^6$

f. $2^2 \times 3^6 \times 5^4$

g. $2^9 \times 3^6 \times 5^6$

h. $2^6 \times 3^3 \times 5^3$

6. Find the lowest number to multiply ...

a. 980 by to make a square number

b. 480 by to make a square number

c. 60 by to make a cube number

1. Write as a product as prime factors. Give your answer in index form.					
a. 18	b. 50	c. 24	d. 72	e. 80	f. 96
g. 150	h. 126	i. 200	j. 550	k. 729	l. 1050
2. Given the prime factor decomposition, find the number					
a. $2 \times 3 \times 5 \times 7$	b. $2^4 \times 5^2$	c. $3^2 \times 5^2 \times 11$	d. $2^4 \times 3^2 \times 5$	e. $2 \times 5^2 \times 7^2 \times 11$	
3. Given the prime factor decomposition, find the prime factor decomposition of the new number					
a. If $V = 2^a \times 3^b$, find $3V$	b. If $W = 2^a \times 5^b$, find $10W$	c. If $X = 3^a \times 5^b \times 7$, find X^2	d. If $Y = 3^a \times 5^b$, find $2Y^2$		
4. Explain, using prime factors, why...					
a. ... 144 is a square number	b. ... 216 is a cube number	c. ... 64 can be both a square and cube number			
5. Decide whether the following are square numbers, cube numbers or neither					
a. $2^2 \times 3^2 \times 5^2$	b. $2^2 \times 3^2 \times 5^3$	c. $2^4 \times 3^4 \times 5^4$	d. $2^5 \times 3^5 \times 5^5$		
e. $2^6 \times 3^6 \times 5^6$	f. $2^2 \times 3^6 \times 5^4$	g. $2^9 \times 3^6 \times 5^6$	h. $2^6 \times 3^3 \times 5^3$		
6. Find the lowest number to multiply ...					
a. 980 by to make a square number	b. 480 by to make a square number	c. 60 by to make a cube number			

1. Write as a product as prime factors. Give your answer in index form.					
a. 18	b. 50	c. 24	d. 72	e. 80	f. 96
g. 150	h. 126	i. 200	j. 550	k. 729	l. 1050
2. Given the prime factor decomposition, find the number					
a. $2 \times 3 \times 5 \times 7$	b. $2^4 \times 5^2$	c. $3^2 \times 5^2 \times 11$	d. $2^4 \times 3^2 \times 5$	e. $2 \times 5^2 \times 7^2 \times 11$	
3. Given the prime factor decomposition, find the prime factor decomposition of the new number					
a. If $V = 2^a \times 3^b$, find $3V$	b. If $W = 2^a \times 5^b$, find $10W$	c. If $X = 3^a \times 5^b \times 7$, find X^2	d. If $Y = 3^a \times 5^b$, find $2Y^2$		
4. Explain, using prime factors, why...					
a. ... 144 is a square number	b. ... 216 is a cube number	c. ... 64 can be both a square and cube number			
5. Decide whether the following are square numbers, cube numbers or neither					
a. $2^2 \times 3^2 \times 5^2$	b. $2^2 \times 3^2 \times 5^3$	c. $2^4 \times 3^4 \times 5^4$	d. $2^5 \times 3^5 \times 5^5$		
e. $2^6 \times 3^6 \times 5^6$	f. $2^2 \times 3^6 \times 5^4$	g. $2^9 \times 3^6 \times 5^6$	h. $2^6 \times 3^3 \times 5^3$		
6. Find the lowest number to multiply ...					
a. 980 by to make a square number	b. 480 by to make a square number	c. 60 by to make a cube number			

1. Write as a product as prime factors. Give your answer in index form.					
a. 18	b. 50	c. 24	d. 72	e. 80	f. 96
g. 150	h. 126	i. 200	j. 550	k. 729	l. 1050
2. Given the prime factor decomposition, find the number					
a. $2 \times 3 \times 5 \times 7$	b. $2^4 \times 5^2$	c. $3^2 \times 5^2 \times 11$	d. $2^4 \times 3^2 \times 5$	e. $2 \times 5^2 \times 7^2 \times 11$	
3. Given the prime factor decomposition, find the prime factor decomposition of the new number					
a. If $V = 2^a \times 3^b$, find $3V$	b. If $W = 2^a \times 5^b$, find $10W$	c. If $X = 3^a \times 5^b \times 7$, find X^2	d. If $Y = 3^a \times 5^b$, find $2Y^2$		
4. Explain, using prime factors, why...					
a. ... 144 is a square number	b. ... 216 is a cube number	c. ... 64 can be both a square and cube number			
5. Decide whether the following are square numbers, cube numbers or neither					
a. $2^2 \times 3^2 \times 5^2$	b. $2^2 \times 3^2 \times 5^3$	c. $2^4 \times 3^4 \times 5^4$	d. $2^5 \times 3^5 \times 5^5$		
e. $2^6 \times 3^6 \times 5^6$	f. $2^2 \times 3^6 \times 5^4$	g. $2^9 \times 3^6 \times 5^6$	h. $2^6 \times 3^3 \times 5^3$		
6. Find the lowest number to multiply ...					
a. 980 by to make a square number	b. 480 by to make a square number	c. 60 by to make a cube number			

1. Write as a product as prime factors. Give your answer in index form.					
a. 18	b. 50	c. 24	d. 72	e. 80	f. 96
g. 150	h. 126	i. 200	j. 550	k. 729	l. 1050
2. Given the prime factor decomposition, find the number					
a. $2 \times 3 \times 5 \times 7$	b. $2^4 \times 5^2$	c. $3^2 \times 5^2 \times 11$	d. $2^4 \times 3^2 \times 5$	e. $2 \times 5^2 \times 7^2 \times 11$	
3. Given the prime factor decomposition, find the prime factor decomposition of the new number					
a. If $V = 2^a \times 3^b$, find $3V$	b. If $W = 2^a \times 5^b$, find $10W$	c. If $X = 3^a \times 5^b \times 7$, find X^2	d. If $Y = 3^a \times 5^b$, find $2Y^2$		
4. Explain, using prime factors, why...					
a. ... 144 is a square number	b. ... 216 is a cube number	c. ... 64 can be both a square and cube number			
5. Decide whether the following are square numbers, cube numbers or neither					
a. $2^2 \times 3^2 \times 5^2$	b. $2^2 \times 3^2 \times 5^3$	c. $2^4 \times 3^4 \times 5^4$	d. $2^5 \times 3^5 \times 5^5$		
e. $2^6 \times 3^6 \times 5^6$	f. $2^2 \times 3^6 \times 5^4$	g. $2^9 \times 3^6 \times 5^6$	h. $2^6 \times 3^3 \times 5^3$		
6. Find the lowest number to multiply ...					
a. 980 by to make a square number	b. 480 by to make a square number	c. 60 by to make a cube number			