

6:07 | Surds

Name: _____

Class: _____

Examples



In Examples 2 and 3 we look for a perfect square, so that it can be simplified with $\sqrt{\quad}$.

Simplify.

1 $\sqrt{6} \times \sqrt{7}$
 $= \sqrt{42}$

2 $\sqrt{28}$
 $= \sqrt{4} \times \sqrt{7}$
 $= 2\sqrt{7}$

3 $4\sqrt{12}$
 $= 4 \times \sqrt{4} \times \sqrt{3}$
 $= 4 \times 2 \times \sqrt{3}$
 $= 8\sqrt{3}$

Exercise

1 Simplify.

a $\sqrt{6} \times \sqrt{5}$

b $\sqrt{7} \times \sqrt{3}$

c $\sqrt{5} \times \sqrt{7}$

d $\sqrt{11} \times \sqrt{3}$

e $\sqrt{10} \times \sqrt{11}$

f $\sqrt{15} \times \sqrt{2}$

g $\sqrt{2} \times \sqrt{13}$

h $\sqrt{10} \times \sqrt{3}$

2 Simplify.

a $\sqrt{18}$

b $3\sqrt{8}$

c $\sqrt{45}$

d $\sqrt{27}$

e $\sqrt{60}$

f $\sqrt{48}$

g $3\sqrt{18}$

h $\sqrt{72}$

i $\sqrt{56}$

j $\sqrt{54}$

k $3\sqrt{12}$

l $3\sqrt{68}$

m $2\sqrt{75}$

n $\sqrt{20}$

o $\sqrt{44}$

p $\sqrt{125}$

q $\sqrt{200}$

r $8\sqrt{160}$

s $5\sqrt{32}$

t $\frac{1}{2}\sqrt{40}$

3 Simplify completely.

a $\sqrt{7} \times \sqrt{7}$

b $\sqrt{6} \times \sqrt{6}$

c $\sqrt{6} \times \sqrt{4}$

d $\sqrt{2} \times \sqrt{6}$

e $\sqrt{10} \times \sqrt{10}$

f $\sqrt{3} \times \sqrt{15}$

g $\sqrt{2} \times \sqrt{8}$

h $\sqrt{5} \times \sqrt{10}$

i $\sqrt{3} \times \sqrt{6}$

j $\sqrt{8} \times \sqrt{6}$

k $\sqrt{20} \times \sqrt{5}$

l $\sqrt{12} \times \sqrt{3}$

Fun Spot 6:07 | How do you tell a can of soup from a can of tomatoes?

Calculate each correct to 1 decimal place. Match the letters with the answers below.

A $\sqrt{14} \times \sqrt{7}$

B $\sqrt{7} \times \sqrt{12}$

D $3\sqrt{5}$

E $2\sqrt{6}$

H $\sqrt{13} \times \sqrt{5}$

L $4\sqrt{8}$

R $2\sqrt{40}$

T $\sqrt{6} \times \sqrt{12}$

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12.6 4.9 9.9 6.7

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8.5 8.1 4.9

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11.3 9.9 9.2 4.9 11.3

6:07 Surds

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|-----|-------------|--------------|-------------|---------------|-------------|--------------|-------------|--------------|--------------|--------------|-------------|-------------|-------------|--------------|-------------|-------------|
| 1 a | $\sqrt{30}$ | b | $\sqrt{21}$ | c | $\sqrt{35}$ | d | $\sqrt{33}$ | e | $\sqrt{110}$ | f | $\sqrt{30}$ | g | $\sqrt{26}$ | h | $\sqrt{30}$ | |
| 2 a | $3\sqrt{2}$ | b | $6\sqrt{2}$ | c | $3\sqrt{5}$ | d | $3\sqrt{3}$ | e | $2\sqrt{15}$ | f | $4\sqrt{3}$ | g | $9\sqrt{2}$ | h | $6\sqrt{2}$ | |
| | i | $2\sqrt{14}$ | j | $3\sqrt{6}$ | k | $6\sqrt{3}$ | l | $6\sqrt{17}$ | m | $10\sqrt{3}$ | n | $2\sqrt{5}$ | o | $2\sqrt{11}$ | p | $5\sqrt{5}$ |
| | q | $10\sqrt{2}$ | r | $32\sqrt{10}$ | s | $20\sqrt{2}$ | t | $\sqrt{10}$ | | | | | | | | |
| 3 a | 7 | b | 6 | c | $2\sqrt{6}$ | d | $2\sqrt{3}$ | e | 10 | f | $3\sqrt{5}$ | g | 4 | h | $5\sqrt{2}$ | |
| | i | $3\sqrt{2}$ | j | $4\sqrt{3}$ | k | 10 | l | 6 | | | | | | | | |