

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

Write each surd below in its simplest form.

a $2\sqrt{12}$

b $3\sqrt{8}$

c $2\sqrt{50}$

d $4\sqrt{18}$

e $5\sqrt{20}$

f $2\sqrt{75}$

g $10\sqrt{27}$

h $3\sqrt{56}$

i $2\sqrt{125}$

j $4\sqrt{45}$

k $3\sqrt{24}$

l $2\sqrt{54}$

m $7\sqrt{56}$

n $3\sqrt{72}$

o $3\sqrt{44}$

p $5\sqrt{90}$

q $6\sqrt{200}$

r $5\sqrt{98}$

s $9\sqrt{108}$

t $5\sqrt{68}$

Simplify, then collect like surds.

a $\sqrt{2} + \sqrt{18}$

b $\sqrt{6} + \sqrt{24}$

c $\sqrt{12} - \sqrt{3}$

d $\sqrt{20} + 5\sqrt{5}$

e $\sqrt{8} + 5\sqrt{2}$

f $\sqrt{27} + 4\sqrt{3}$

g $\sqrt{32} - 3\sqrt{2}$

h $\sqrt{90} - \sqrt{10}$

i $10\sqrt{3} - \sqrt{48}$

j $\sqrt{45} + \sqrt{5}$

k $\sqrt{75} - 2\sqrt{3}$

l $\sqrt{72} - 3\sqrt{2}$

Simplify completely:

a $\sqrt{8} + \sqrt{2}$

b $\sqrt{12} + 2\sqrt{3}$

c $2\sqrt{2} + \sqrt{18}$

d $2\sqrt{5} + \sqrt{20}$

e $\sqrt{27} + 2\sqrt{3}$

f $3\sqrt{6} + \sqrt{24}$

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

h $3\sqrt{5} - \sqrt{20}$

i $\sqrt{32} - 3\sqrt{2}$

j $\sqrt{18} + \sqrt{32}$

k $\sqrt{20} + \sqrt{45}$

l $2\sqrt{27} - \sqrt{48}$

m $\sqrt{75} - 2\sqrt{12}$

n $\sqrt{98} + 3\sqrt{50}$

o $3\sqrt{50} + 2\sqrt{32}$

p $5\sqrt{28} + 2\sqrt{63}$

q $4\sqrt{45} - 2\sqrt{20}$

r $2\sqrt{75} - 3\sqrt{48}$

Simplify:

a $2\sqrt{8} - \sqrt{18} + 3\sqrt{2}$

b $2\sqrt{5} + \sqrt{45} - \sqrt{20}$

c $\sqrt{27} + 2\sqrt{48} - 5\sqrt{3}$

d $5\sqrt{7} - \sqrt{63} + 2\sqrt{28}$

e $5\sqrt{3} + \sqrt{50} - \sqrt{12}$

f $2\sqrt{45} + \sqrt{20} + \sqrt{32}$

g $9\sqrt{8} + 3\sqrt{12} - \sqrt{27}$

h $5\sqrt{18} + \sqrt{72} - \sqrt{75}$