1 Simplify:

  a $3\sqrt{2} + 7\sqrt{2}$

  b $11\sqrt{3} - 8\sqrt{3}$

  c $6\sqrt{5} - 7\sqrt{5}$

  d $-\sqrt{2} + 2\sqrt{2}$

  e $\sqrt{3} - (2 - \sqrt{3})$

  f $-\sqrt{2} - (3 + \sqrt{2})$

  g $5\sqrt{2} - \sqrt{3} + \sqrt{2} - \sqrt{3}$

  h $\sqrt{7} - 2\sqrt{2} + \sqrt{7} - \sqrt{2}$

  i $3\sqrt{3} - \sqrt{2} - (1 - \sqrt{2})$

  j $2(\sqrt{3} + 1) + 3(1 - \sqrt{3})$

  k $3(\sqrt{3} - \sqrt{2}) - (\sqrt{2} - \sqrt{3})$

  l $3(\sqrt{3} - 1) - 2(2 - \sqrt{3})$

2 Simplify:

  a $(\sqrt{3})^2$
    b $(\sqrt{3})^3$
    c $(\sqrt{3})^5$
    d $\left(\dfrac{1}{\sqrt{3}}\right)^2$

  e $(\sqrt{7})^2$
    f $(\sqrt{7})^3$
    g $\left(\dfrac{1}{\sqrt{7}}\right)^2$
    h $\left(\dfrac{3}{\sqrt{7}}\right)^2$

  i $(\sqrt{5})^2$
    j $(\sqrt{5})^4$
    k $\left(\dfrac{5}{\sqrt{5}}\right)^2$
    l $\left(\dfrac{10}{\sqrt{5}}\right)^2$

3 Simplify:

  a $(2\sqrt{2})^2$
    b $(4\sqrt{2})^2$
    c $(2\sqrt{3})^2$

  d $(3\sqrt{3})^2$
    e $(2\sqrt{5})^2$
    f $(3\sqrt{5})^2$

  g $(2\sqrt{7})^2$
    h $(2\sqrt{10})^2$
    i $(7\sqrt{10})^2$

  j $3\sqrt{2} \times 4\sqrt{2}$
    k $5\sqrt{3} \times 2\sqrt{3}$
    l $7\sqrt{2} \times 5\sqrt{2}$

  m $(-4\sqrt{2})^2$
    n $(-7\sqrt{3})^2$
    o $\sqrt{2} \times (-3\sqrt{2})$

  p $(-2\sqrt{3})(-5\sqrt{3})$
    q $(-2\sqrt{7}) \times 3\sqrt{7}$
    r $\sqrt{11} \times (-2\sqrt{11})$

4 Simplify:

  a $\sqrt{6\frac{1}{4}}$
    b $\sqrt{1\frac{7}{9}}$
    c $\sqrt{2\frac{14}{25}}$
    d $\sqrt{7\frac{1}{9}}$

5 Simplify:

a $\sqrt{2} \times \sqrt{3}$

b $\sqrt{2} \times \sqrt{7}$

c $\sqrt{2} \times \sqrt{17}$

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

e $2\sqrt{2} \times 5\sqrt{3}$

f $(3\sqrt{2})^2$

g $5\sqrt{2} \times \sqrt{7}$

h $2\sqrt{6} \times 3\sqrt{5}$

i $-5\sqrt{2} \times 2\sqrt{7}$

j $(-\sqrt{7}) \times (-2\sqrt{3})$

k $(2\sqrt{3})^2 \times 2\sqrt{5}$

l $(2\sqrt{2})^3 \times 5\sqrt{3}$

6 Simplify:

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

b $\dfrac{\sqrt{3}}{\sqrt{27}}$

c $\dfrac{\sqrt{18}}{\sqrt{3}}$

d $\dfrac{\sqrt{2}}{\sqrt{50}}$

e $\dfrac{\sqrt{75}}{\sqrt{5}}$

f $\dfrac{\sqrt{5}}{\sqrt{75}}$

g $\dfrac{\sqrt{18}}{\sqrt{2}}$

h $\dfrac{\sqrt{3}}{\sqrt{60}}$

i $\dfrac{3\sqrt{6}}{\sqrt{2}}$

j $\dfrac{4\sqrt{12}}{\sqrt{3}}$

k $\dfrac{4\sqrt{6}}{\sqrt{24}}$

l $\dfrac{3\sqrt{98}}{2\sqrt{2}}$