

## Surds – Answers

### Problems involving surds

$$\begin{aligned} 1) \quad AC^2 &= (\sqrt{7} - 1)^2 + (\sqrt{7} + 1)^2 \\ &= 7 - 2\sqrt{7} + 1 + 7 + 2\sqrt{7} + 1 \\ &= 16 \\ AC &= 4 \end{aligned}$$

### Rational and Irrational Numbers

1) (R = rational, I = irrational)

(a) I      (b) I      (c) R      (d) R      (e) R      (f) I  
(g) R      (h) I      (i) R      (j) I      (k) R      (l) I      (m) I

2) eg  $\pi + 1$  or  $\sqrt{17}$

3) eg  $x = 12$ , or  $x = 27$

4) (c)  $\frac{27}{100}$    (d)  $\frac{3}{11}$    (e) 9      (g) 2      (i) 160      (k) 6

5) Yes, no, yes.  $(\sqrt{5})^n$  is rational if  $n$  is even.