

Answers

Essential Skills 13	
1	$x = -0.4 \text{ \& } -5.6$
2	$x = 0.2 \text{ \& } -1.5$
3	$x = 1.0 \text{ \& } -0.8$
4	$x = 1.6 \text{ \& } 1.3$
5	$x = 0.4 \text{ \& } -4.4$
6	$x = -4.8 \text{ \& } 0.8$
7	$x = 0.7 \text{ \& } 0.2$
8	$x = 1 \text{ \& } -2.5$
9	$x = 1.5 \text{ \& } 0.3$
10	$x = -0.7 \text{ \& } 2.2$
AQ	$A(-0.581, 0) \text{ \& } B(2.58, 0)$

Essential Skills 15	
1	$30^\circ \text{ \& } 150^\circ$
2	$30^\circ \text{ \& } 330^\circ$
3	$31^\circ \text{ \& } 211^\circ$
4	$9.6^\circ \text{ \& } 170.4$
5	$48.2^\circ \text{ \& } 311.8^\circ$
6	$77.5^\circ \text{ \& } 257.5^\circ$
7	$203.6^\circ \text{ \& } 336.4^\circ$
8	$120^\circ \text{ \& } 240^\circ$
9	$135^\circ \text{ \& } 315^\circ$
10	$23.6^\circ \text{ \& } 156.4^\circ$
AQ	$A(210^\circ, -1) \text{ \& } B(330^\circ, -1)$

Essential Skills 14	
1	$\frac{3\sqrt{5}}{5}$
2	$\frac{2\sqrt{6}}{3}$
3	$4\sqrt{2}$
4	$\frac{\sqrt{7}}{14}$
5	$\frac{5\sqrt{3}}{9}$
6	$\frac{2\sqrt{6}}{9}$
7	$\frac{\sqrt{10}}{15}$
8	$\frac{\sqrt{5}}{5}$
9	$\frac{5\sqrt{2}}{4}$
10	$\frac{\sqrt{3}}{6}$
AQ	(1) $\frac{\sqrt{15}}{12}$ (2) $\frac{2\sqrt{6}}{3}$

Essential Skills 16	
1	$b^2 - 4ac = -7$; no real roots
2	$b^2 - 4ac = 1$; 2 real & distinct roots
3	$b^2 - 4ac = 0$; 2 real & equal roots
4	$b^2 - 4ac = 9$; 2 real & distinct roots
5	$b^2 - 4ac = 21$; 2 real & distinct roots
6	$b^2 - 4ac = 0$; 2 real & equal roots
7	$b^2 - 4ac = 81$; 2 real & distinct roots
8	$b^2 - 4ac = -31$; no real roots
9	$b^2 - 4ac = 41$; 2 real & distinct roots
10	$b^2 - 4ac = -16$; no real roots
AQ	(1) $b^2 - 4ac = 0$ (2) $k = \frac{5}{8}$