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| Question | Main points of expected responses |
| 1  | •1 Expansion•2 Compare•3 $k$•4 $∝$ | •1 $kcosx∙cos∝+ksinx∙sin∝$ •2 $kcos∝ =-3 ksin∝ =3$•3  $k=\sqrt{(-3)^{2}+3^{2}}=\sqrt{18}=3\sqrt{2}$•4  $∝=tan^{-1}\left(-\frac{3}{3}\right)=135^{o}$$3\sqrt{2}cos⁡(x-135)$ |
| 2 | •1 Expansion•2 Compare•3  $k$•4 $∝$ | •1 $rsin8x∙cos∝+rcos8x∙sin∝$ •2 $kcos∝ =1 ksin∝ =5$•3  $k=\sqrt{1^{2}+5^{2}}=\sqrt{26}$•4  $∝=tan^{-1}\left(\frac{5}{1}\right)=1.37$$\sqrt{26}sin⁡(8x+1.37)$ |
| 3 | •1 Expansion•2 Compare•3 $k$•4 $∝$•5 equation•6 Begin to solve•7 Solution | •1 $ksinθ∙cos∝-kcosθ∙sin∝$ •2 $kcos∝ =\sqrt{3} ksin∝ =1$•3  $k=\sqrt{\left(\sqrt{3}\right)^{2}+1^{2}}=2$•4  $∝=tan^{-1}\left(\frac{\sqrt{3}}{1}\right)=\frac{π}{3}$•5  $2\sin(\left(θ-\frac{π}{3}\right))=1$•6  $\left(θ-\frac{π}{3}\right)=\frac{π}{6}$ , $\frac{5π}{6}$•7  $θ=\frac{π}{2}, \frac{7π}{6}$ |
| 4 (a)   (b) 4 (b) | •1 $k$ value•2 Compare•3 $k$•4 $∝$•5 Value of $x$ | •1 $ k=5$ •2 $ kcosx∙cos∝+ ksinx∙sin∝$•3  $kcos∝ =3 ksin∝ =4$•4  $∝=tan^{-1}\left(\frac{4}{3}\right)=53.1^{o}$$$ 5cos⁡(x-53.1^{o})$$•5  $x=53.1^{o}$ |
| 5 (a) (b) | •1 Amplitude•2 Period•3•4 •5 •6 •7 •8  | •1 $20\sqrt{5}$•2 $10$ |