<u>**ANSWERS 5.2-5.4**</u>

I)

1) $-3\sqrt{2}-2\sqrt{3}$, **2)** 3 , **3)** -2 , **4)** $-\dfrac{5\sqrt{3}}{2}$, **5)** $\dfrac{\sqrt{3}}{6}$, **6)** $\dfrac{3+2\sqrt{3}}{3}$, **7)** $-\dfrac{7\sqrt{3}}{6}$,

8) -1 , **9)** $\sec^2 40^o$ **or** $\csc^2 50^o$, **10)** -1 , **11)** -1 , **12)** $\cos^2 70^o \ or \sin^2 20^o$,

13) 0 , **14)** -1 , **15)** $-\cot^2 38^o \ or -\tan^2 52^o$, **16)** 0 , **17)** 1 , **18)** 1 , **19)**

$\dfrac{2\sqrt{3}-1}{2}$, **20)** $\dfrac{11\sqrt{3}}{3}$, **21)** $\dfrac{2\sqrt{3}-1}{2}$, **22)** $-\dfrac{11\sqrt{3}}{6}$, **23)** $-\dfrac{\sqrt{2}}{4}$, **24)** $\dfrac{\sqrt{3}}{3}$, **25)**

$\dfrac{2\sqrt{3}}{9}$, **26)** $3+2\sqrt{2}$

II)

 1) F , **2)** F , **3)** T, **4)** T, **5)** F , **6)** T , **7)** T , **8)** T , **9)** T ,
10) F , **11)** T , **12)** F, **13)** T , **14)** T , **15)** F , **16)** T , **17)** T ,
18) F , **19)** T , **20)** T

III)

1) $\sin\theta = \dfrac{3}{5}$, $\cos\theta = -\dfrac{4}{5}$, $\tan\theta = -\dfrac{3}{4}$ **2)** $\sin\theta = -\dfrac{1}{4}$, $\cos\theta = -\dfrac{\sqrt{15}}{4}$, $\tan\theta = \dfrac{1}{\sqrt{15}}$

3) $\sin\theta = -\dfrac{1}{3}$, $\cos\theta = \dfrac{2\sqrt{2}}{3}$, $\tan\theta = -\dfrac{1}{2\sqrt{2}}$ **4)** $\sin\theta = -\dfrac{\sqrt{2}}{\sqrt{3}}$, $\cos\theta = -\dfrac{1}{\sqrt{3}}$, $\tan\theta = \sqrt{2}$

IV)

1) **a)** $\dfrac{1}{3}$ **b)** 8 **c)** 3 **d)** $\dfrac{8}{9}$, **2)** **a)** $\dfrac{1}{2}$ **b)** 5 **c)** 2 **d)** $\dfrac{5}{4}$

3) $\dfrac{10}{3}$, **4)** 0 , **5)** 4

V)

1) $-\dfrac{2}{3}$, **2)** $\dfrac{1}{3}$, **3)** -2 , **4)** -1 , **5)** $-\dfrac{2-\sqrt{2}}{2}$, **6)** $-\dfrac{1}{\sqrt{3}}$, **7)** $-1-\sqrt{3}$

VI)

1) $\frac{1}{2}\tan\theta$, **2)** $\sin\theta$, **3)** $\cos\theta$

VII)

1) $-\frac{\sqrt{7}}{\sqrt{2}}$, **2)** $-\frac{6}{\sqrt{31}}$, **3)** $\frac{4\pi}{3},\frac{5\pi}{3}$, **4)** $\frac{\pi}{6},\frac{7\pi}{6}$, **5)** $\frac{\pi}{2},\frac{3\pi}{2}$, **6)** $0,\pi$, **7)** $-\frac{4\pi}{3}$, **8)** $-\frac{7\pi}{6},-\frac{\pi}{6}$

9) $-\frac{3\pi}{2}$, **10)** $-\pi,0$, **11)** $\frac{\sqrt{3}}{2}$, **12)** $-\frac{\sqrt{3}}{2}$, **13)** $(-\frac{2}{\sqrt{29}},-\frac{5}{\sqrt{29}})$, **14)** $(-\frac{2}{\sqrt{29}},\frac{5}{\sqrt{29}})$

15) $(\frac{3}{\sqrt{34}},-\frac{5}{\sqrt{34}})$, **16)** II , **17)** IV