5.3 1)

$$\vec{\alpha}\cdot\vec{\beta}=|\vec{\alpha}|\cdot|\vec{\beta}|\cdot\sigma\upsilon\nu\left(\hat{\vec{\alpha},\vec{\beta}}\right)=3\cdot4\cdot\sigma\upsilon\nu60^{o}\overset{\sigma\upsilon\nu60^{o}=\frac{1}{2}}{=}12\cdot\frac{1}{2}=6$$

5.3 2)

$$\vec{\alpha}\cdot\vec{\beta}=|\vec{\alpha}|\cdot|\vec{\beta}|\cdot\sigma\upsilon\nu\left(\hat{\vec{\alpha},\vec{\beta}}\right)=5\cdot2\cdot\sigma\upsilon\nu30^{o}=10\frac{\sqrt{3}}{2}=5\sqrt{3}$$

5.3 3)

$$\vec{\alpha}\cdot\vec{\beta}=|\vec{\alpha}|\cdot|\vec{\beta}|\cdot\sigma\upsilon\nu\left(\hat{\vec{\alpha},\vec{\beta}}\right)=\sqrt{2\cdot6}\cdot\sigma\upsilon\nu45=\sqrt{2}\cdot6\cdot\frac{\sqrt{2}}{2}=6$$

5.3 4)

$$\vec{\alpha}\cdot\vec{\beta}=|\vec{\alpha}|\cdot|\vec{\beta}|\cdot\sigma\upsilon\nu\left(\hat{\vec{\alpha},\vec{\beta}}\right)=4\cdot7\cdot\sigma\upsilon\nu120=4\cdot7\cdot\left(-\frac{1}{2}\right)=-14$$

5.3 5)

$$\vec{\alpha}\cdot\vec{\beta}=|\vec{\alpha}|\cdot|\vec{\beta}|\cdot\sigma\upsilon\nu\left(\hat{\vec{\alpha},\vec{\beta}}\right)=1\cdot10\cdot\sigma\upsilon\nu\frac{\pi}{3}=1\cdot10\cdot\frac{1}{2}=5$$

5.3 6)

$$\vec{\alpha}\cdot\vec{\beta}=|\vec{\alpha}|\cdot|\vec{\beta}|\cdot\sigma\upsilon\nu\left(\hat{\vec{\alpha},\vec{\beta}}\right)=8\cdot3\cdot\sigma\upsilon\nu\frac{2\pi}{3}=8\cdot3\cdot\left(-\frac{1}{2}\right)=-12$$

5.3 7)

$$\vec{\alpha}\cdot\vec{\beta}=|\vec{\alpha}|\cdot|\vec{\beta}|\cdot\sigma\upsilon\nu\left(\hat{\vec{\alpha},\vec{\beta}}\right)=29\cdot32\cdot\sigma\upsilon\nu\frac{\pi}{2}=0$$