$u = \langle 7, -1, 2 \rangle$ and $v = \langle -2, -1, 3 \rangle$

① **Dot Product:**

$$u \cdot v = 7 \cdot (-2) + (-1) \cdot (-1) + 2 \cdot 3 = -14 + 1 + 6 = -7$$

$$u \cdot v = -7$$

② **Norms:**

$$\|u\| = \sqrt{7^2 + (-1)^2 + 2^2} = \sqrt{49 + 1 + 4} = \sqrt{54} = 3\sqrt{6}$$

$$\|v\| = \sqrt{(-2)^2 + (-1)^2 + 3^2} = \sqrt{4 + 1 + 9} = \sqrt{14}$$

③ **Compute $\cos\theta$:**

$$\cos\theta = \frac{u \cdot v}{\|u\|\|v\|} = \frac{-7}{(3\sqrt{6})(\sqrt{14})} = \frac{-7}{3\sqrt{84}} = \frac{-7}{3 \cdot 2\sqrt{21}} = \frac{-7}{6\sqrt{21}}$$

④ **Angle in degrees:**

$$\theta = \cos^{-1}\left(\frac{7}{6\sqrt{21}}\right)$$

Numerically,

$$\frac{-7}{6\sqrt{21}} \approx -0.151$$

and so

$$\boxed{\theta \approx \cos^{-1}(-0.151) \approx 98.687^\circ}$$