$$\frac{\partial^2 U}{\partial r^2} =$$
$$\frac{r\sqrt{r^2\sin^2(\theta)}\sin(\theta)\frac{\partial}{\partial r}U(r,\theta,\phi)}{(r^2)^{\frac{3}{2}}} - \frac{2r\sqrt{r^2\sin^2(\theta)}\cos(\theta)\frac{\partial^2}{\partial\theta\partial r}U(r,\theta,\phi)}{(r^2)^{\frac{3}{2}}} + \frac{\sqrt{r^2\sin^2(\theta)}\cos(\theta)\frac{\partial}{\partial\theta}U(r,\theta,\phi)}{(r^2)^{\frac{3}{2}}} +$$
$$\cos^2(\theta)\frac{\partial^2}{\partial r^2}U(r,\theta,\phi) + \frac{\sin^2(\theta)\frac{\partial^2}{\partial\theta^2}U(r,\theta,\phi)}{r^2} + \frac{\sin(2\theta)\frac{\partial}{\partial\theta}U(r,\theta,\phi)}{2r^2}$$

$$\frac{\partial^2 U}{\partial y^2} =$$

$$\frac{r^3 \sin^2(\theta) \cos^2(\phi) \cos(\theta) \frac{\partial^2}{\partial \theta \partial r} U(r,\theta,\phi)}{\sqrt{r^2 \sin^2(\theta)} (r^2)^{\frac{3}{2}}} + \frac{r^3 \sin(\theta) \cos^2(\phi) \cos^2(\theta) \frac{\partial}{\partial r} U(r,\theta,\phi)}{\sqrt{r^2 \sin^2(\theta)} (r^2)^{\frac{3}{2}}} + \frac{r^3 \sin^4(\theta) \cos^2(\phi) \cos(\theta) \frac{\partial^2}{\partial \theta \partial r} U(r,\theta,\phi)}{(r^2 \sin^2(\theta))^{\frac{3}{2}} \sqrt{r^2}} -$$

$$\frac{r^2 \sin(\phi) \cos(\phi) \frac{\partial^2}{\partial r \partial \phi} U(r,\theta,\phi)}{(r^2)^{\frac{3}{2}}} - \frac{r^2 \cos^2(\phi) \frac{\partial}{\partial r} U(r,\theta,\phi)}{(r^2)^{\frac{3}{2}}} + \frac{r^2 \frac{\partial}{\partial r} U(r,\theta,\phi)}{(r^2)^{\frac{3}{2}}} - \frac{r^2 \sin^4(\theta) \cos^2(\phi) \cos(\theta) \frac{\partial}{\partial \theta} U(r,\theta,\phi)}{(r^2 \sin^2(\theta))^{\frac{3}{2}} \sqrt{r^2}} +$$

$$\sin^2(\theta) \cos^2(\phi) \frac{\partial^2}{\partial r^2} U(r,\theta,\phi) - \frac{\sin(\phi) \cos(\phi) \frac{\partial^2}{\partial r \partial \phi} U(r,\theta,\phi)}{\sqrt{r^2}} + \frac{2 \sin(\phi) \cos(\phi) \frac{\partial}{\partial \phi} U(r,\theta,\phi)}{-2r^2 \cos^2(\theta) + 2r^2} -$$

$$\frac{2 \cos^2(\phi) \frac{\partial^2}{\partial \phi^2} U(r,\theta,\phi)}{-2r^2 \cos^2(\theta) + 2r^2} + \frac{2 \frac{\partial^2}{\partial \phi^2} U(r,\theta,\phi)}{-2r^2 \cos^2(\theta) + 2r^2} + \frac{\sin(\phi) \cos(\phi) \frac{\partial}{\partial \phi} U(r,\theta,\phi)}{r\sqrt{r^2}} - \frac{\sqrt{2} \sin(\phi) \cos(\phi) \cos(\theta) \frac{\partial^2}{\partial \theta \partial \phi} U(r,\theta,\phi)}{r\sqrt{-2r^2 \cos^2(\theta) + 2r^2}} -$$

$$\frac{\sqrt{2} \cos^2(\phi) \cos(\theta) \frac{\partial}{\partial \theta} U(r,\theta,\phi)}{r\sqrt{-2r^2 \cos^2(\theta) + 2r^2}} + \frac{\sqrt{2} \cos(\theta) \frac{\partial}{\partial \theta} U(r,\theta,\phi)}{r\sqrt{-2r^2 \cos^2(\theta) + 2r^2}} - \frac{\sin(\phi) \cos(\phi) \cos(\theta) \frac{\partial^2}{\partial \theta \partial \phi} U(r,\theta,\phi)}{r\sqrt{r^2 \sin^2(\theta)}} +$$

$$\frac{\sin(\phi) \cos(\phi) \cos^2(\theta) \frac{\partial}{\partial \phi} U(r,\theta,\phi)}{r\sqrt{r^2 \sin^2(\theta)} \sin(\theta)} - \frac{\sin(\theta) \cos^2(\phi) \cos(\theta) \frac{\partial}{\partial \theta} U(r,\theta,\phi)}{r^2} + \frac{\cos^2(\phi) \cos^2(\theta) \frac{\partial^2}{\partial \theta^2} U(r,\theta,\phi)}{r^2}$$

$$\frac{\partial^2 U}{\partial z^2} =$$
$$\frac{r^3 \sin^2(\phi) \sin^2(\theta) \cos(\theta) \frac{\partial^2}{\partial \theta \partial r} U(r,\theta,\phi)}{\sqrt{r^2 \sin^2(\theta)} (r^2)^{\frac{3}{2}}} + \frac{r^3 \sin^2(\phi) \sin(\theta) \cos^2(\theta) \frac{\partial}{\partial r} U(r,\theta,\phi)}{\sqrt{r^2 \sin^2(\theta)} (r^2)^{\frac{3}{2}}} + \frac{r^3 \sin^2(\phi) \sin^4(\theta) \cos(\theta) \frac{\partial^2}{\partial \theta \partial r} U(r,\theta,\phi)}{(r^2 \sin^2(\theta))^{\frac{3}{2}} \sqrt{r^2}} +$$
$$\frac{r^2 \sin(\phi) \cos(\phi) \frac{\partial^2}{\partial r \partial \phi} U(r,\theta,\phi)}{(r^2)^{\frac{3}{2}}} + \frac{r^2 \cos^2(\phi) \frac{\partial}{\partial r} U(r,\theta,\phi)}{(r^2)^{\frac{3}{2}}} - \frac{r^2 \sin^2(\phi) \sin^4(\theta) \cos(\theta) \frac{\partial}{\partial \theta} U(r,\theta,\phi)}{(r^2 \sin^2(\theta))^{\frac{3}{2}} \sqrt{r^2}} +$$
$$\sin^2(\phi) \sin^2(\theta) \frac{\partial^2}{\partial r^2} U(r,\theta,\phi) + \frac{\sin(\phi) \cos(\phi) \frac{\partial^2}{\partial r \partial \phi} U(r,\theta,\phi)}{\sqrt{r^2}} - \frac{2 \sin(\phi) \cos(\phi) \frac{\partial}{\partial \phi} U(r,\theta,\phi)}{-2r^2 \cos^2(\theta) + 2r^2} +$$
$$\frac{2 \cos^2(\phi) \frac{\partial^2}{\partial \phi^2} U(r,\theta,\phi)}{-2r^2 \cos^2(\theta) + 2r^2} - \frac{\sin(\phi) \cos(\phi) \frac{\partial}{\partial \phi} U(r,\theta,\phi)}{r\sqrt{r^2}} + \frac{\sqrt{2} \sin(\phi) \cos(\phi) \cos(\theta) \frac{\partial^2}{\partial \theta \partial \phi} U(r,\theta,\phi)}{r\sqrt{-2r^2 \cos^2(\theta) + 2r^2}} + \frac{\sqrt{2} \cos^2(\phi) \cos(\theta) \frac{\partial}{\partial \theta} U(r,\theta,\phi)}{r\sqrt{-2r^2 \cos^2(\theta) + 2r^2}} +$$
$$\frac{\sin(\phi) \cos(\phi) \cos(\theta) \frac{\partial^2}{\partial \theta \partial \phi} U(r,\theta,\phi)}{r\sqrt{r^2 \sin^2(\theta)}} - \frac{\sin(\phi) \cos(\phi) \cos^2(\theta) \frac{\partial}{\partial \phi} U(r,\theta,\phi)}{r\sqrt{r^2 \sin^2(\theta)} \sin(\theta)} - \frac{\sin^2(\phi) \sin(\theta) \cos(\theta) \frac{\partial}{\partial \theta} U(r,\theta,\phi)}{r^2} +$$
$$\frac{\sin^2(\phi) \cos^2(\theta) \frac{\partial^2}{\partial \theta^2} U(r,\theta,\phi)}{r^2}$$

$$\frac{\partial^2 U}{\partial x \partial y} =$$

$$\sin(\theta)\cos(\phi)\cos(\theta)\frac{\partial^2}{\partial r^2}U(r,\theta,\phi) + \frac{\sin(\phi)\sin(\theta)\frac{\partial^2}{\partial\theta\partial\phi}U(r,\theta,\phi)}{r\sqrt{r^2\sin^2(\theta)}} - \frac{\sin(\theta)\cos(\phi)\cos(\theta)\frac{\partial^2}{\partial\theta^2}U(r,\theta,\phi)}{r^2} -$$

$$\frac{\cos(\phi)\cos^2(\theta)\frac{\partial}{\partial\theta}U(r,\theta,\phi)}{r^2} - \frac{\left(r^2\right)^{\frac{3}{2}}\sin^3(\theta)\cos(\phi)\frac{\partial^2}{\partial\theta\partial r}U(r,\theta,\phi)}{r^3\sqrt{r^2\sin^2(\theta)}} + \frac{\left(r^2\right)^{\frac{3}{2}}\sin(2\theta)\cos(\phi)\cos(\theta)\frac{\partial^2}{\partial\theta\partial r}U(r,\theta,\phi)}{2r^3\sqrt{r^2\sin^2(\theta)}} +$$

$$\frac{\left(r^2\right)^{\frac{3}{2}}\cos(\phi)\cos(\theta)\cos(2\theta)\frac{\partial}{\partial r}U(r,\theta,\phi)}{2r^3\sqrt{r^2\sin^2(\theta)}} - \frac{\left(r^2\right)^{\frac{3}{2}}\cos(\phi)\cos(\theta)\frac{\partial}{\partial r}U(r,\theta,\phi)}{2r^3\sqrt{r^2\sin^2(\theta)}} - \frac{\left(r^2\right)^{\frac{3}{2}}\sin(\phi)\cos(\theta)\frac{\partial^2}{\partial r\partial\phi}U(r,\theta,\phi)}{r^4\sin(\theta)} +$$

$$\frac{\left(r^2\right)^{\frac{3}{2}}\sin^3(\theta)\cos(\phi)\frac{\partial}{\partial\theta}U(r,\theta,\phi)}{r^4\sqrt{r^2\sin^2(\theta)}}$$

$$\frac{\partial^2 U}{\partial x \partial z} =$$

$$\sin(\phi)\sin(\theta)\cos(\theta)\frac{\partial^2}{\partial r^2}U(r,\theta,\phi) - \frac{\sin(\theta)\cos(\phi)\frac{\partial^2}{\partial\theta\partial\phi}U(r,\theta,\phi)}{r\sqrt{r^2\sin^2(\theta)}} - \frac{\sin(\phi)\sin(\theta)\cos(\theta)\frac{\partial^2}{\partial\theta^2}U(r,\theta,\phi)}{r^2} -$$

$$\frac{\sin(\phi)\cos^2(\theta)\frac{\partial}{\partial\theta}U(r,\theta,\phi)}{r^2} - \frac{\left(r^2\right)^{\frac{3}{2}}\sin(\phi)\sin^3(\theta)\frac{\partial^2}{\partial\theta\partial r}U(r,\theta,\phi)}{r^3\sqrt{r^2\sin^2(\theta)}} + \frac{\left(r^2\right)^{\frac{3}{2}}\sin(\phi)\sin(2\theta)\cos(\theta)\frac{\partial^2}{\partial\theta\partial r}U(r,\theta,\phi)}{2r^3\sqrt{r^2\sin^2(\theta)}} +$$

$$\frac{\left(r^2\right)^{\frac{3}{2}}\sin(\phi)\cos(\theta)\cos(2\theta)\frac{\partial}{\partial r}U(r,\theta,\phi)}{2r^3\sqrt{r^2\sin^2(\theta)}} - \frac{\left(r^2\right)^{\frac{3}{2}}\sin(\phi)\cos(\theta)\frac{\partial}{\partial r}U(r,\theta,\phi)}{2r^3\sqrt{r^2\sin^2(\theta)}} + \frac{\left(r^2\right)^{\frac{3}{2}}\cos(\phi)\cos(\theta)\frac{\partial^2}{\partial r\partial\phi}U(r,\theta,\phi)}{r^4\sin(\theta)} +$$

$$\frac{\left(r^2\right)^{\frac{3}{2}}\sin(\phi)\sin^3(\theta)\frac{\partial}{\partial\theta}U(r,\theta,\phi)}{r^4\sqrt{r^2\sin^2(\theta)}}$$

$$\frac{\partial^2 U}{\partial y \partial z} =$$

$$\sin(\phi)\sin^2(\theta)\cos(\phi)\frac{\partial^2}{\partial r^2}U(r,\theta,\phi) - \frac{\sin(\phi)\sin(\theta)\cos(\phi)\cos(\theta)\frac{\partial}{\partial\theta}U(r,\theta,\phi)}{r^2} + \frac{\sin(\phi)\cos(\phi)\cos^2(\theta)\frac{\partial^2}{\partial\theta^2}U(r,\theta,\phi)}{r^2} -$$
$$\frac{\sin(\phi)\cos(\phi)\frac{\partial^2}{\partial\phi^2}U(r,\theta,\phi)}{r^2\sin^2(\theta)} - \frac{\cos^2(\phi)\frac{\partial}{\partial\phi}U(r,\theta,\phi)}{r^2\sin^2(\theta)} - \frac{\left(r^2\right)^{\frac{3}{2}}\sin^2(\phi)\frac{\partial^2}{\partial r\partial\phi}U(r,\theta,\phi)}{r^4} - \frac{\left(r^2\right)^{\frac{3}{2}}\sin(\phi)\cos(\phi)\frac{\partial}{\partial r}U(r,\theta,\phi)}{r^4} +$$
$$\frac{\left(r^2\right)^{\frac{3}{2}}\cos^2(\phi)\frac{\partial^2}{\partial r\partial\phi}U(r,\theta,\phi)}{r^4} - \frac{\left(r^2\sin^2(\theta)\right)^{\frac{3}{2}}\sin(\phi)\cos(\phi)\cos(\theta)\frac{\partial}{\partial\theta}U(r,\theta,\phi)}{r^5\sin^4(\theta)} + \frac{\left(r^2\sin^2(\theta)\right)^{\frac{3}{2}}\cos^2(\phi)\cos(\theta)\frac{\partial^2}{\partial\theta\partial\phi}U(r,\theta,\phi)}{r^5\sin^4(\theta)} +$$
$$\frac{\left(r^2\right)^{\frac{3}{2}}\sin^2(\phi)\frac{\partial}{\partial\phi}U(r,\theta,\phi)}{r^5} - \frac{\sqrt{r^2\sin^2(\theta)}\left(r^2\right)^{\frac{3}{2}}\sin(\phi)\cos(\phi)\cos(\theta)\frac{\partial}{\partial\theta}U(r,\theta,\phi)}{r^6} - \frac{\left(r^2\sin^2(\theta)\right)^{\frac{5}{2}}\sin^2(\phi)\cos(\theta)\frac{\partial^2}{\partial\theta\partial\phi}U(r,\theta,\phi)}{r^7\sin^6(\theta)} +$$
$$\frac{\left(r^2\sin^2(\theta)\right)^{\frac{5}{2}}\sin^2(\phi)\cos^2(\theta)\frac{\partial}{\partial\phi}U(r,\theta,\phi)}{r^7\sin^7(\theta)} + \frac{\left(r^2\sin^2(\theta)\right)^{\frac{3}{2}}\left(r^2\right)^{\frac{3}{2}}\sin(\phi)\cos(\phi)\cos(\theta)\frac{\partial^2}{\partial\theta\partial r}U(r,\theta,\phi)}{r^7\sin^2(\theta)} +$$
$$\frac{\left(r^2\sin^2(\theta)\right)^{\frac{7}{2}}\left(r^2\right)^{\frac{3}{2}}\sin(\phi)\cos(\phi)\cos(\theta)\frac{\partial^2}{\partial\theta\partial r}U(r,\theta,\phi)}{r^{11}\sin^6(\theta)} + \frac{\left(r^2\sin^2(\theta)\right)^{\frac{7}{2}}\left(r^2\right)^{\frac{3}{2}}\sin(\phi)\cos(\phi)\cos^2(\theta)\frac{\partial}{\partial r}U(r,\theta,\phi)}{r^{11}\sin^7(\theta)}$$

$$\omega^2 \cdot \left(12.0A^3 \sin^2(\theta) - 24.0A^3 - 24.0A^2 \sin^2(\theta) + 48.0A^2 + 12.0A \sin^2(\theta) - 22.4A - 1.6\right)$$

$$36A(A-1)^2 \cdot \left(7A\omega^2 \left(-0.8A^5 + 2.4A^4 - 2.0A^3 + 0.4A^2(A-1)^3 \sin^2(\theta) + 0.4\right) - 1\right) \sin(\theta)$$