> fit <- manova(cbind(Species,Gene,Phi,Theta) ~ Zoonotic, data = phi\_data)

> summary(fit, test="Pillai")

Df Pillai approx F num Df den Df Pr(>F)

Zoonotic 1 0.1905 1.4709 4 25 0.2409

Residuals 28

> summary.aov(fit)

Response Species :

Df Sum Sq Mean Sq F value Pr(>F)

Zoonotic 1 0.025 0.0254 0.0124 0.912

Residuals 28 57.175 2.0419

Response Gene :

Df Sum Sq Mean Sq F value Pr(>F)

Zoonotic 1 0.0397 0.03968 0.0916 0.7644

Residuals 28 12.1270 0.43311

Response Phi :

Df Sum Sq Mean Sq F value Pr(>F)

Zoonotic 1 0.003463 0.0034625 0.9074 0.349

Residuals 28 0.106849 0.0038160

Response Theta :

Df Sum Sq Mean Sq F value Pr(>F)

Zoonotic 1 0.000224 0.00022399 0.0819 0.7769

Residuals 28 0.076598 0.00273564

> fit <- manova(cbind(Species,Phi,Theta) ~ Gene, data = phi\_data)

> summary(fit, test="Pillai")

Df Pillai approx F num Df den Df Pr(>F)

Gene 3 0.33647 1.0948 9 78 0.3765

Residuals 26

> summary.aov(fit)

Response Species :

Df Sum Sq Mean Sq F value Pr(>F)

Gene 3 5.722 1.9072 0.9633 0.4249

Residuals 26 51.478 1.9799

Response Phi :

Df Sum Sq Mean Sq F value Pr(>F)

Gene 3 0.023637 0.0078789 2.3635 0.09427 .

Residuals 26 0.086674 0.0033336

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Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Response Theta :

Df Sum Sq Mean Sq F value Pr(>F)

Gene 3 0.013931 0.0046436 1.9197 0.1512

Residuals 26 0.062891 0.0024189