Multiply both sides by r^2: $F \cdot r^2 = \dfrac{GmM}{r^2} \cdot r^2$

Simplify: $Fr^2 = GmM$

Divide both sides by Gm: $\dfrac{Fr^2}{Gm} = \dfrac{GmM}{Gm}$

Simplify: $\dfrac{Fr^2}{Gm} = M$