

**55** Since  $z = kx^2y^3$  and  $z = 31.9$  when  $x = 2$  and  $y = 2.5$ .

$$31.9 = k(2)^2(2.5)^3 \Rightarrow 31.9 = 62.5k \Rightarrow k = \frac{31.9}{62.5} \approx 0.510$$