

## Solutions

1. Write each expression in the form  $b^r$ :

(a)

$$6^{1/3}6^{3/5} = 6^{14/15}.$$

(b)

$$(1/3)^6(3/2)^6 = (1/2)^6.$$

(c)

$$6^{1/3}6^{-3/5} = 6^{-4/15}.$$

(d)

$$(6^{1/3})^{-3/5} = 6^{-1/5}$$

(e)

$$3^{1/3}5^{1/3} = 15^{1/3}.$$

2. Combine exponents where possible.

(a)

$$(a^2b^3)^5 = a^{10}b^{15}.$$

(b)

$$(a^2b^{-1})^3(a^2 + b^3) = a^8b^{-3} + a^6.$$

(c)

$$\frac{(x^3y^2z^{-3})^2}{(xy^2z^3)^2} = x^4z^{-12}.$$

(d)

$$\frac{(x^{1/3}y^2z^{-3})^2}{(xy^{-1}z^3)^2} = x^{-4}y^5z^{-12}.$$

(e)

$$\frac{(x^{-1}y^2z^{-1/3})^5}{(x^{-1}y^2z^3)^{1/7}} = x^{-34/7}y^{68/7}z^{-44/21}$$