

**QUESTION 1** Write each of the following in simplest index notation.

a  $p \times p \times p \times p \times p =$  \_\_\_\_\_ b  $q \times q \times q \times q \times q \times q =$  \_\_\_\_\_

c  $x \times x \times x \times x \times x \times x =$  \_\_\_\_\_ d  $a \times a \times b \times b \times b =$  \_\_\_\_\_

e  $m \times m \times m =$  \_\_\_\_\_ f  $c \times c \times c \times c \times d \times d =$  \_\_\_\_\_

g  $a \times a \times a \times a =$  \_\_\_\_\_ h  $y \times y \times y \times y \times y \times z \times z =$  \_\_\_\_\_

**QUESTION 2** Write each of the following in expanded form.

a  $x^5 =$  \_\_\_\_\_ b  $m^6 =$  \_\_\_\_\_

c  $a^7 =$  \_\_\_\_\_ d  $n^8 =$  \_\_\_\_\_

e  $e^3 =$  \_\_\_\_\_ f  $p^{10} =$  \_\_\_\_\_

g  $y^4 =$  \_\_\_\_\_ h  $l^9 =$  \_\_\_\_\_

**QUESTION 4** Write each of the following in simplest index form.

a  $15 \times a \times a \times a =$  \_\_\_\_\_ b  $p \times p \times p \times p \times 5 \times p =$  \_\_\_\_\_

c  $m \times m \times 7 \times m =$  \_\_\_\_\_ d  $6 \times m \times m \times 2 \times m \times m =$  \_\_\_\_\_

e  $16 \times x \times x \times x \times x =$  \_\_\_\_\_ f  $h \times 3 \times h \times 5 \times h =$  \_\_\_\_\_

g  $4 \times y \times 3 \times y \times y =$  \_\_\_\_\_ h  $8 \times b \times b \times 2 \times b =$  \_\_\_\_\_

**QUESTION 5** Expand each of the following.

a  $6a^2 =$  \_\_\_\_\_ b  $8x^3 =$  \_\_\_\_\_

c  $9y^3 =$  \_\_\_\_\_ d  $5m^7 =$  \_\_\_\_\_

e  $15b^2 =$  \_\_\_\_\_ f  $16y^5 =$  \_\_\_\_\_

g  $7a^4 =$  \_\_\_\_\_ h  $3a^2b^3 =$  \_\_\_\_\_

**QUESTION 6** Evaluate the following when  $a = 5$  and  $b = 6$

a  $a^2 + b =$  \_\_\_\_\_ b  $a^3b =$  \_\_\_\_\_

c  $a^2 + b^2 =$  \_\_\_\_\_ d  $ab^3 =$  \_\_\_\_\_

e  $a^3 + b^2 =$  \_\_\_\_\_ f  $a^2b^2 =$  \_\_\_\_\_