

**SKILL PRACTICE****EXPONENTS  
& ROOTS**

$$4 \cdot 4 \cdot 4$$

Write the expression using exponents.

1  
POINTS

**A****SKILL PRACTICE****EXPONENTS  
& ROOTS**

$$5 \cdot 5 \cdot 5 \cdot 5$$

Write the expression using exponents.

1  
POINTS

**B****SKILL PRACTICE****EXPONENTS  
& ROOTS**

$$2^3 \text{ or } 3^2$$

Which is larger?

1  
POINTS

**C****SKILL PRACTICE****EXPONENTS  
& ROOTS**

$$2^5 \text{ or } 5^2$$

Which is larger?

1  
POINTS

**D****SKILL PRACTICE****EXPONENTS  
& ROOTS**

$$\frac{1}{2} \cdot \frac{1}{2} \cdot \frac{1}{2}$$

Write the expression using exponents.

1  
POINTS

**E****SKILL PRACTICE****EXPONENTS  
& ROOTS**

$$\frac{1}{5} \cdot \frac{1}{5}$$

Write the expression using exponents.

1  
POINTS

**F****SKILL PRACTICE****EXPONENTS  
& ROOTS**

$$\sqrt{25}$$

What is the value?

1  
POINTS

**G****SKILL PRACTICE****EXPONENTS  
& ROOTS**

$$\sqrt{81}$$

What is the value?

1  
POINTS

**H**

**SKILL PRACTICE****EXPONENTS & ROOTS**

$$\frac{1}{100}$$

Write the expression with a base of 10 and negative exponents.

1  
POINTS

**I****SKILL PRACTICE****EXPONENTS & ROOTS**

$$\frac{1}{10,000}$$

Write the expression with a base of 10 and negative exponents.

1  
POINTS

**J****SKILL PRACTICE****EXPONENTS & ROOTS**

$$\sqrt[3]{8}$$

What is the value?

1  
POINTS

**K****SKILL PRACTICE****EXPONENTS & ROOTS**

$$\sqrt[3]{-8}$$

What is the value?

1  
POINTS

**L****SKILL PRACTICE****EXPONENTS & ROOTS**

$$\sqrt[3]{0}$$

What is the value?

1  
POINTS

**M****CHALLENGE****EXPONENTS & ROOTS**

$$a \cdot a \cdot a$$

Write the expression using exponents.

2  
POINTS

**N****CHALLENGE****EXPONENTS & ROOTS**

$$b \cdot b \cdot b \cdot b \cdot b$$

Write the expression using exponents.

2  
POINTS

**O****CHALLENGE****EXPONENTS & ROOTS**

$$ab^2 \text{ or } a^2b$$

for  $a=2; b=3$

Which is larger?

2  
POINTS

**P**

**CHALLENGE****EXPONENTS & ROOTS**

$$a^b \text{ or } b^a$$

for  $a=3; b=4$

Which is larger?

2  
POINTS**Q****CHALLENGE****EXPONENTS & ROOTS**

$$\frac{1}{w} \cdot \frac{1}{w} \cdot \frac{1}{w}$$

Write the expression using negative exponents.

2  
POINTS**R****CHALLENGE****EXPONENTS & ROOTS**

$$\frac{2}{r} \cdot \frac{2}{r}$$

Write the expression using negative exponents.

2  
POINTS**S****CHALLENGE****EXPONENTS & ROOTS**

$$\sqrt{a^2}$$

Simplify the expression.

2  
POINTS**T****CHALLENGE****EXPONENTS & ROOTS**

$$\sqrt{n^4}$$

Simplify the expression.

2  
POINTS**U****CHALLENGE****EXPONENTS & ROOTS**

$$\frac{1}{t^5}$$

Write the expression with negative exponents.

2  
POINTS**V****CHALLENGE****EXPONENTS & ROOTS**

$$\frac{2}{w^4}$$

Write the expression with negative exponents.

2  
POINTS**W****CHALLENGE****EXPONENTS & ROOTS**

$$\sqrt[3]{8a^3}$$

Simplify the expression.

2  
POINTS**X**

**CHALLENGE****EXPONENTS & ROOTS**

$$\sqrt[3]{27m^6}$$

Simplify the expression.

**2**  
POINTS

**Y****CHALLENGE****EXPONENTS & ROOTS**

$$\sqrt{64b^2}$$

Simplify the expression.

**2**  
POINTS

**Z****APPLICATION****EXPONENTS & ROOTS**

Jayvon is building a patio that is a 12 foot wide square.

What the total area of the patio?

**4**  
POINTS

**α****APPLICATION****EXPONENTS & ROOTS**

Leah is designing a cube on a 3-D printer with edges that are 6 cm long.

What is the volume of the cube?

**4**  
POINTS

**β****APPLICATION****EXPONENTS & ROOTS**

The volume of air in a room is  $64 \text{ in}^3$ . This volume is equal in volume to a cube with a side of  $n$ .

What is the value of  $n$ ?

**4**  
POINTS

**Δ****APPLICATION****EXPONENTS & ROOTS**

The volume of a sphere of radius  $r$  is given by  $V = \frac{4}{3}\pi r^3$ . A regulation basketball has a radius of 4.75 inches.

What is the volume to the nearest inch?

**4**  
POINTS

**λ****APPLICATION****EXPONENTS & ROOTS**

Logan frames a piece of his art in a square frame that has an area of  $121 \text{ in}^2$ .

What are its dimensions?

**4**  
POINTS

**π****APPLICATION****EXPONENTS & ROOTS**

Each of four trucks carries four pallets. Each pallet fits four drill presses.

How many drill presses are in the shipment?

**4**  
POINTS

**θ**



## KEY CARD

## EXPONENTS & ROOTS

|          |          |          |           |          |           |          |                                      |
|----------|----------|----------|-----------|----------|-----------|----------|--------------------------------------|
| <b>A</b> | $4^3$    | <b>I</b> | $10^{-2}$ | <b>Q</b> | $a^b$     | <b>Y</b> | $3m^2$                               |
| <b>B</b> | $5^4$    | <b>J</b> | $10^{-4}$ | <b>R</b> | $w^{-3}$  | <b>Z</b> | $8b$                                 |
| <b>C</b> | $3^2$    | <b>K</b> | $2$       | <b>S</b> | $4r^{-2}$ | <b>α</b> | $144 \text{ ft}^2$                   |
| <b>D</b> | $2^5$    | <b>L</b> | $-2$      | <b>T</b> | $a$       | <b>β</b> | $216 \text{ cm}^2$                   |
| <b>E</b> | $2^{-3}$ | <b>M</b> | $0$       | <b>U</b> | $n^2$     | <b>π</b> | $11 \text{ in} \times 11 \text{ in}$ |
| <b>F</b> | $5^{-2}$ | <b>N</b> | $a^3$     | <b>V</b> | $t^{-5}$  | <b>Δ</b> | $4 \text{ m}$                        |
| <b>G</b> | $5$      | <b>O</b> | $b^5$     | <b>W</b> | $2w^{-4}$ | <b>θ</b> | $64$                                 |
| <b>H</b> | $9$      | <b>P</b> | $ab^2$    | <b>X</b> | $2a$      | <b>λ</b> | $449 \text{ in}^3$                   |



## KEY CARD

## EXPONENTS & ROOTS

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| <b>A</b> | $4^3$    | <b>I</b> | $10^{-2}$ | <b>Q</b> | $a^b$     | <b>Y</b> | $3m^2$                               |
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| <b>G</b> | $5$      | <b>O</b> | $b^5$     | <b>W</b> | $2w^{-4}$ | <b>θ</b> | $64$                                 |
| <b>H</b> | $9$      | <b>P</b> | $ab^2$    | <b>X</b> | $2a$      | <b>λ</b> | $449 \text{ in}^3$                   |