# Warm-Up

# November 4, 2019

## Are these perfect squares?

A. $\dfrac{225}{100}$    ← 15x15    ↑ 10x10

yes

$$\sqrt{\dfrac{225}{100}} = \dfrac{15}{10}$$

$$\dfrac{15}{10} \times \dfrac{15}{10} = \dfrac{225}{100}$$

B. $\dfrac{196}{81}$    ← 14x14    ← 9x9

yes

$$\sqrt{\dfrac{196}{81}} = \dfrac{14}{9}$$

C. $\dfrac{128}{800}$    ← no    ↑ no

$\dfrac{64}{400}$    ← 8x8    ↑ 20x20

yes

**How can you use the square roots of whole numbers to determine the square roots of fractions?**

Look at the numerator and denominator **separately** and determine the square root of each.

Fraction must always be in **SIMPLEST FORM** to determine if it is a perfect square!!!! ↖ lowest terms

# Is this a perfect square?

$$\frac{25}{100} \overset{5 \times 5}{} = \overset{\leftarrow}{} \qquad \frac{50}{200} \overset{no}{} = \frac{5}{20} \overset{no}{} = \frac{1}{4} \overset{1 \times 1}{}_{2 \times 2}$$

10 × 10  yes                                                    yes

1. As the question is written the answer is NO, this is not a perfect square.
2. If not in lowest terms you must reduce the fraction to determine if it is a perfect square.
3. Both the numerator and denominator must be perfect squares to say the fraction is a perfect square.

# Which of the following are perfect squares?

A.   $\dfrac{25}{200}$   ← 5x5

← no

$\dfrac{1}{8}$   ← 1x1

← NO

NO

B.   $\dfrac{169}{121}$   ← 13x13

← 11x11

yes

$\sqrt{\dfrac{169}{121}} = \dfrac{13}{11}$

## Which numbers below are perfect squares.

**i) 25**                **ii) 24**                **iii) 20**

yes                       NO                        NO
5 x 5                     1 x 24                    1 x 20
                          2 x 12                    2 x 10
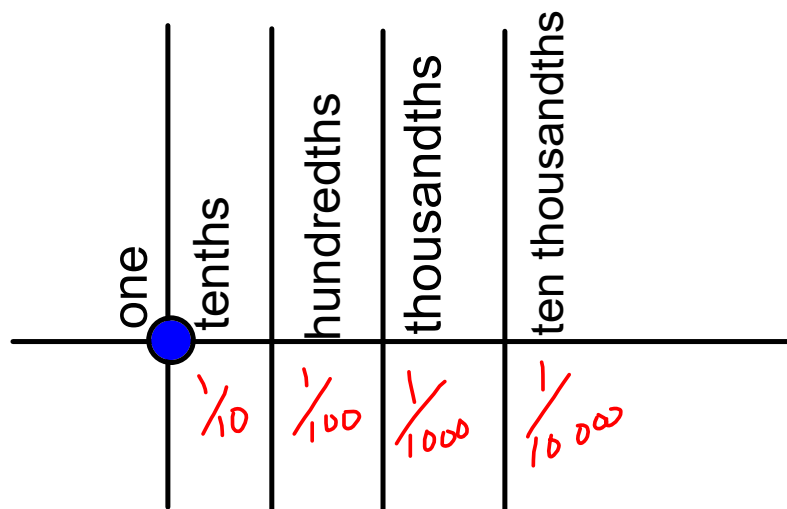                          3 x 8                     4 x 5
                          4 x 6

**How can we use the square roots of whole numbers to determine the square roots of decimals?**

**Convert a decimal to a fraction then determine the square root of the numerator and denominator.**

one | tenths | hundredths | thousandths | ten thousandths

$\frac{1}{10}$    $\frac{1}{100}$    $\frac{1}{1000}$    $\frac{1}{10\,000}$

## Convert the following into a fraction.

a) 0.25

$$\frac{25}{100}$$

b) 0.4924

$$\frac{4924}{10\,000}$$

c) 1.26

$$\frac{126}{100}$$

**Are these perfect squares?**

a) $\dfrac{1}{10}$ ← 1×1　↖ no

b) $\dfrac{1}{100}$ ← 1×1　↑ 10×10　yes

c) $\dfrac{1}{1000}$ ← 1×1　↑ no

d) $\dfrac{1}{10\,000}$ ← 1×1　↑ 100×100　yes

Which of the following are perfect squares?

A. $\dfrac{75}{300}$ ← No

        ↑ No

$\dfrac{1}{4}$ ← 1×1

   ↑ 2×2 (yes)

B. $\dfrac{196}{81}$ ← 14×14

     ↑ 9×9

yes

# Find the square root of the following using FRACTIONS !!!

A. $\sqrt{0.25}$

$\sqrt{\dfrac{25}{100}} = \dfrac{5}{10}$

B. $\sqrt{1.96}$

$\sqrt{\dfrac{196}{100}} = \dfrac{14}{10}$

# Square Root of a Decimal

| Decimal | Fraction | Square Root |
|---------|----------|-------------|
| A. 0.49 | $\dfrac{49}{100}$ | $\sqrt{\dfrac{49}{100}} = \dfrac{7}{10}$ |
| B. 0.64 | $\dfrac{64}{100}$ | |
| C. 1.21 | | |
| D. 1.44 | | |

**What are the equal fractions that will give 1/9?**

b) What is the square root of 1/9

## Which of the following are perfect squares?

A. $\dfrac{75}{300}$

B. $\dfrac{196}{81}$

## Remember to convert to fractions first!

C.   0.25

D.     1.96

# Which of the following are perfect squares?

If "no" at first...put in lowest terms then decide!

A.  $\dfrac{40}{200}$          B.  $\dfrac{36}{50}$

# Are they perfect squares

C. 8       D. 16          E. 2
18         5               9