

Warm-Up

November 3, 2016

No Calculator

Which of the following are perfect squares?

A. $\frac{25}{200} = \frac{1}{8}$

Handwritten notes: 5×5 (pointing to 25), Lowest Term (pointing to the fraction), 1×1 (pointing to 1), and NO (pointing to 8).

NO

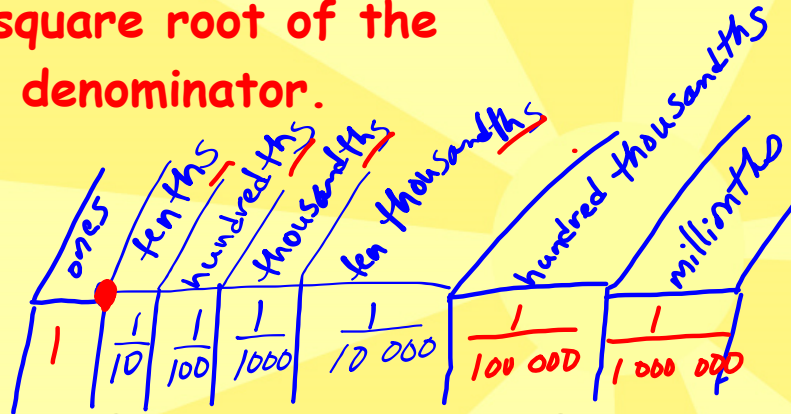
B. $\frac{169}{121}$

Handwritten notes: 13×13 (pointing to 169) and 11×11 (pointing to 121).

yes

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.



Are these perfect squares?

- a) $\frac{1}{10}$ $\leftarrow 1 \times 1$
 \nwarrow NO
 (NO)
- b) $\frac{1}{100}$ $\leftarrow 1 \times 1$
 \nearrow 10 x 10
 yes
- c) $\frac{1}{1000}$ $\leftarrow 1 \times 1$
 NO
 $\sqrt{1000} = 31.6227766...$
- d) $\frac{1}{10000}$ $\leftarrow 1 \times 1$
 \nearrow 100 x 100

How can you tell if a number is a perfect square using your calculator?

Using your calculator are the following perfect squares?

- a) 0.144 $(?)^2 = 0.144$
 - b) 0.203
 - c) 1.21
- 0.3794733192... 0.47958315... 1.1

When using a calculator if you take the square root of a number and it terminates then the number is a perfect square! * [stop]

Square Root of a Decimal

Decimal	Fraction	Square Root
A. 0.49	$\frac{49}{100}$	$\frac{\sqrt{49}}{\sqrt{100}} = \frac{7}{10}$
B. 0.64	$\frac{64}{100}$	$\frac{\sqrt{64}}{\sqrt{100}} = \frac{8}{10}$
C. 1.21 →	$\frac{121}{100}$	$\frac{\sqrt{121}}{\sqrt{100}} = \frac{11}{10}$
D. 1.44		



Which of the following are perfect squares? [Lowest Terms first]

A. $\frac{40}{200}$

NO → then put in lowest terms

$\frac{1}{5}$ ← |x| NO

B. $\frac{36}{50}$ ← yes

$\frac{18}{25}$ ← NO

NO ← 5x5

No Calculator

Which of the following are perfect squares?

A. $\frac{75}{300} = \frac{3}{12} = \frac{1}{4}$ $\leftarrow 1 \times 1$ $\leftarrow 2 \times 2$ **yes**

B. $\frac{196}{81}$ $\leftarrow 14 \times 14$ $\leftarrow 9 \times 9$ **yes**

Solve using fractions?

A. 0.25 - $\frac{25}{100}$ $\leftarrow 5 \times 5$ $\leftarrow 10 \times 10$ **yes**

B. 1.96 $\frac{196}{100}$ $\leftarrow 14 \times 14$ $\leftarrow 10 \times 10$ **yes**

Is each decimal a perfect square?[remember to convert it to a fraction in its simplest form]

A. 6.25

$$\frac{625}{100}$$

$\swarrow 25 \times 25$
 $\uparrow 10 \times 10$

B. 0.627

$$\frac{627}{1000}$$

(NO)

c) $\frac{400}{10000}$ $\leftarrow 20 \times 20$

yes \uparrow
100x100

Use Fractions

d) 0.0121

$\frac{121}{10000} \leftarrow 11 \times 11$

yes

Using your
calculator

Find the square root of the following.

a) $\sqrt{1789.29}$ $\rightarrow \frac{178929}{100}$ $\sqrt{533.61}$
42.3 23.1

Find the square root. No calculator!

[Use fractions]

a) $\sqrt{0.16}$
 $\frac{\sqrt{16}}{\sqrt{100}} = \frac{4}{10}$

$\sqrt{1.69}$
 $\frac{\sqrt{169}}{\sqrt{100}} = \frac{13}{10}$