

How do we know if a number is a perfect Square using a calculator?

→ When you take the square root
Decimal terminates

$$\sqrt{0.25} = 0.5$$

Are either of the following perfect squares?

$$\sqrt{1.25} = 1.1180\dots$$

irrational
does not terminate

$$\sqrt{0.81} = 0.9$$

terminates
is a perf. sq.

Without Calculator

Example:

Determine if the decimal is a perfect square?

a) $0.\underline{\underline{25}}$
 0.5

b) $2.\underline{\underline{5}}$
Not a
perf. sq.

c) 1.69
 1.3

1

Without a calculator

Determine if the decimal is a perfect square?

3.61

1.9

0.016

Not a perf. sq.

$$0.4^2 = 0.16$$

$$0.04^2 = 0.0016$$

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3. a) $\sqrt{0.25}$

0.5

3 (a, b, c)

#4 (a, b)

#5 (e-h)

#6 (a, b)

#7 (a-d)

b) $\sqrt{\frac{9}{16}} = \frac{\sqrt{9}}{\sqrt{16}} = \frac{3}{4}$

c) $\sqrt{\frac{16}{25}} = \frac{4}{5}$

slide 11

4. +6.

<u>Perfect Sq.</u>	<u>Sq. roots</u>
1	1
4	2
9	3
16	4
25	5
36	6
49	7
64	↓
81	
100	
121	
144	
169	
196	
225	
256	
289	
324	
361	
400	

5. e-h

$$e) \sqrt{\frac{1}{36}} = \frac{1}{6}$$

$$f) \sqrt{\frac{25}{9}} = \frac{5}{3}$$

$$g) \sqrt{\frac{64}{100}} = \frac{8}{10} = \frac{4}{5}$$

$$h) \sqrt{\frac{36}{16}} = \frac{6}{4} = \frac{3}{2}$$

$\left| \frac{2}{4} \right.$
 $\left| \frac{1}{2} \right.$

7. a-d

$$\begin{aligned} \text{a) } \sqrt{\frac{169}{16}} &= \frac{13}{4} \\ &= 3\frac{1}{4} \end{aligned}$$

$$\begin{aligned} \text{b) } \sqrt{\frac{400}{196}} &= \frac{20}{14} \\ &= \frac{10}{7} \end{aligned}$$

$$\text{c) } \sqrt{\frac{256}{361}} = \frac{16}{19}$$

$$\text{d) } \sqrt{\frac{225}{289}} = \frac{15}{17} = 1\frac{3}{17}$$

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- 5 (a, ~~b~~, c, ~~d~~, ~~e~~, ~~f~~)
 7 (~~a~~, ~~b~~, c, e, f, g, h, i)
 8 (a, c, d, f, g, i, , l)
 9 (a, b, g, h)
 10(a, b)
 11 (a)
 14
 16

$$\sqrt{\frac{36}{81}} = \frac{\sqrt{36}}{\sqrt{81}} = \frac{6}{9}$$

$$\sqrt{144} = 12$$

$$\frac{36}{1} \checkmark$$

$$3.\underset{\uparrow}{6} = \frac{36}{10} \times \quad \times$$

$$0.\underset{\uparrow}{36} = \frac{36}{100} \checkmark \quad \checkmark$$