

Bell Ringer

Evaluate $8x^2 \div \frac{2}{3}$ when $x = -1$

Evaluate $x^2 - 4xy$ when $x = -2$ and $y = 5$

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Evaluate $8x^2 \div \frac{2}{3}$ when $x = -1$

$$\begin{aligned} 8(-1)^2 &\div \frac{2}{3} \\ 8 \cdot \frac{3}{2} &= \frac{24}{2} = 12 \end{aligned}$$

Evaluate $x^2 - 4xy$ when $x = -2$ and $y = 5$

$$\begin{aligned} (-2)^2 - 4(-2)(5) \\ 4 - -40 \\ 4 + 40 \end{aligned} \quad 44$$

Square Root Notes

A square root of a number is one of its two equal factors, which means if $x^2 = y$, then x is the square root of y .

Example: $5^2 = 25$, so 5 is the square root of 25.

Every positive number has both a positive and negative square root.

A radical symbol $\sqrt{\quad}$ is used to indicate a square root.

The opposite of squaring a number is finding the square root.

If a negative number is inside the radical symbol, the value is undefined. (In Algebra II, you'll learn about imaginary numbers i)

Perfect squares are the squares of integers. Below is the list of the first 15 perfect squares.

$$\sqrt{1} = \pm 1$$

$$\sqrt{36} = \pm 6$$

$$\sqrt{121} = \pm 11$$

$$\sqrt{4} = \pm 2$$

$$\sqrt{49} = \pm 7$$

$$\sqrt{144} = \pm 12$$

$$\sqrt{9} = \pm 3$$

$$\sqrt{64} = \pm 8$$

$$\sqrt{169} = \pm 13$$

$$\sqrt{16} = \pm 4$$

$$\sqrt{81} = \pm 9$$

$$\sqrt{196} = \pm 14$$

$$\sqrt{25} = \pm 5$$

$$\sqrt{100} = \pm 10$$

$$\sqrt{225} = \pm 15$$

Find each square root.

$$1) \sqrt{64}$$

± 8

$$2) -\sqrt{121}$$

-11

$$3) \sqrt{256}$$

± 16

$$4) \sqrt{-9}$$

undefined

Estimate each square root to the nearest integer.

5) $\sqrt{22}$

About ± 5

6) $-\sqrt{319}$

About -18

Evaluate. Round to the nearest hundredth.

$$7) \frac{7 \pm 3\sqrt{2}}{-1}$$

$$\frac{7 + 3\sqrt{2}}{-1}$$

$$\frac{7 + 4.24}{-1}$$

$$-11.24$$

and

$$\frac{7 - 3\sqrt{2}}{-1}$$

$$\frac{7 - 4.24}{-1}$$

$$-2.76$$

Solve the equation.

$$8) \ 2x^2 - 5 = 27$$

$$+5 +5$$

$$\frac{2x^2}{2} = \frac{32}{2}$$

$$x^2 = 16$$

$$\sqrt{x^2} = \sqrt{16}$$

$$x = \pm 4$$

Solve the equation. Leave in radical form.

$$9) \ 5x^2 + 5 = 20$$

$$-5 - 5$$

$$5x^2 = 15$$

$$x^2 = 3$$

$$\sqrt{x^2} = \sqrt{3}$$

$$x = \pm \sqrt{3}$$

Solve the equation. Round to the nearest hundredth.

$$10) 4x^2 - 3 = 57$$

$$4x^2 = 60$$

$$x^2 = 15$$

$$x = \pm 3.87$$

skipped
the work
steps

Solve the equation. Round to the nearest hundredth.

$$11) \frac{2}{3}n^2 - 6 = 2$$

$$\frac{2}{3}n^2 = 8$$

$$n^2 = \frac{8}{1} \cdot \frac{3}{2}$$

$$n^2 = 12$$

$$\sqrt{n^2} = \sqrt{12}$$

$$n = \pm 3.46$$