Warmup: Complete the table

$1^2 =$ 1	$\sqrt{1} = 1$	$11^2 = 121$	$\sqrt{121} = 11$
$2^2 =$ 4	$\sqrt{4} =$ 2	$12^2 =$ 144	$\sqrt{\ } =$
$3^2 =$ 9	$\sqrt{9} =$ 3	$13^2 =$ 169	$\sqrt{169} =$ 13
$4^2 =$ 16	$\sqrt{16} =$ 4	$14^2 =$ 196	$\sqrt{\ } =$
$5^2 =$ 25	$\sqrt{25} =$ 5	$15^2 =$ 225	$\sqrt{\ } =$
$6^2 =$ 36	$\sqrt{36} =$ 6	$16^2 =$ ~~169~~ 256	$\sqrt{\ } =$
$7^2 =$ 49	$\sqrt{49} =$ 7	$17^2 =$ ~~289~~	$\sqrt{\ } =$
$8^2 =$ 64	$\sqrt{64} =$ 8	$18^2 =$ 324	$\sqrt{\ } =$
$9^2 =$ 81	$\sqrt{81} =$ 9	$19^2 =$ 361	$\sqrt{\ } =$
$10^2 =$ 100	$\sqrt{100} =$ 10	$20^2 =$ 400	$\sqrt{\ } =$

(14) Anna burned 15 calories per minute running for x minutes and 10 calories per minute hiking for y minutes. She spent a total of 60 minutes running and hiking and burned 700 calories. The system of equations shown below can be used to determine how much time Anna spent on each exercise.

$$15x + 10y = 700$$

$$x + y = 60$$

What is the value of x, the minutes Anna spent running?

A. 10

B. 20

C. 30

D. 40

$y = 60 - x$

$15x + 10(60 - x) = 700$

$15x + 600 - 10x = 700$

$5x = 100$

$x = 20$

(17) A baseball team had $1,000 to spend on supplies. The team spent $185 on a new bat. New baseballs cost $4 each. The inequality $185 + 4b \leq 1{,}000$ can be used to determine the number of new baseballs (b) that the team can purchase. Which statement about the number of new baseballs that can be purchased is true?

A. The team can purchase 204 new baseballs.

B. The minimum number of new baseballs that can be purchased is 185.

C. The maximum number of new baseballs that can be purchased is 185.

D. The team can purchase 185 new baseballs, but this number is neither the maximum nor the minimum.

?

$4b \leq 815$

$b \leq 203.75$

n=1 n=2

Tim's scores the first 5 times he played a video game are listed below. (21)

4,526 4,599 4,672 4,745 4,818

+73 +73 +73

Tim's scores follow a pattern. Which expression can be used to determine his score after he played the video game n times?

A. $73n + 4,453$

B. $73(n + 4,453)$

C. $4,453n + 73$

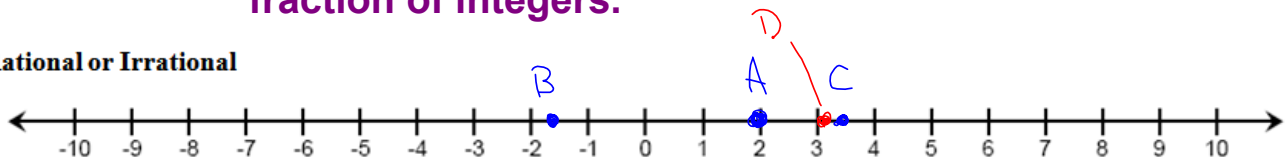
D. $4,526n$

Integer: $\{\ldots -3, -2, -1, 0, 1, 2, 3, \ldots\}$

A rational number is **a real number that can be written as a fraction of integers. (denominator cannot = 0)**

An irrational number is **a real number that CANNOT be written as a simple fraction of integers.**

Rational or Irrational

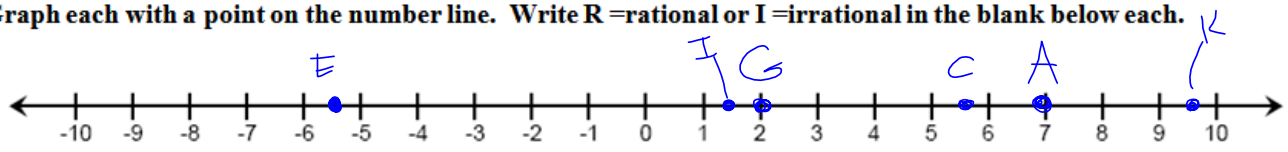


Graph the following points:

1. A if its coordinate is 2. $= \frac{2}{1}$ Rat
2. B if its coordinate is -1.6. $= -\frac{8}{5}$ Rat
3. C if its coordinate is $\sqrt{12} \approx 3.464$ IRR
4. D if its coordinate is π. ≈ 3.1415 IRR

-1.6 | math | enter | enter

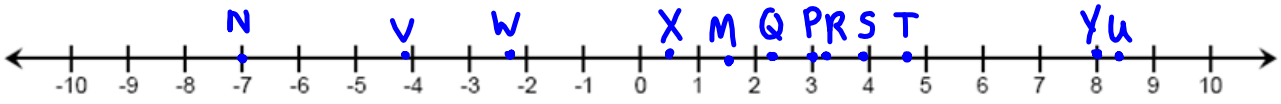
Graph each with a point on the number line. Write R =rational or I =irrational in the blank below each.



1. A at $7 = \frac{7}{1}$ Rat
2. B at -9 _____
3. C at $5\frac{2}{3} = \frac{17}{3}$ RAT
4. D at 9.2 _____
5. E at $-5\frac{1}{2}$ Rat
6. F at -8.37 _____
7. G at $\sqrt{4} = \frac{2}{1}$ RAT
8. H at π _____
9. I at $\sqrt{2} \approx 1.41$ IRR
10. J at $\sqrt{40}$ _____
11. K at $\sqrt{92} \approx 9.59$ IRR
12. L at $\sqrt{\frac{1}{9}}$ _____

alpha y = z

Graph each with a point on the number line. Write R =rational or I =irrational in the blank below each.



13. M at 1.5 — R

14. N at -7 — R

15. P at $\sqrt{9}$ $=3$ — R

16. Q at $\sqrt{5}$ ≈ 2.2 — I

17. R at π ≈ 3.14 — I

18. S at $\sqrt{15}$ ≈ 3.9 — I

19. T at $4\frac{2}{3}$ — R

20. U at $\sqrt{70}$ ≈ 8.4 — I

21. V at -4.1 — R

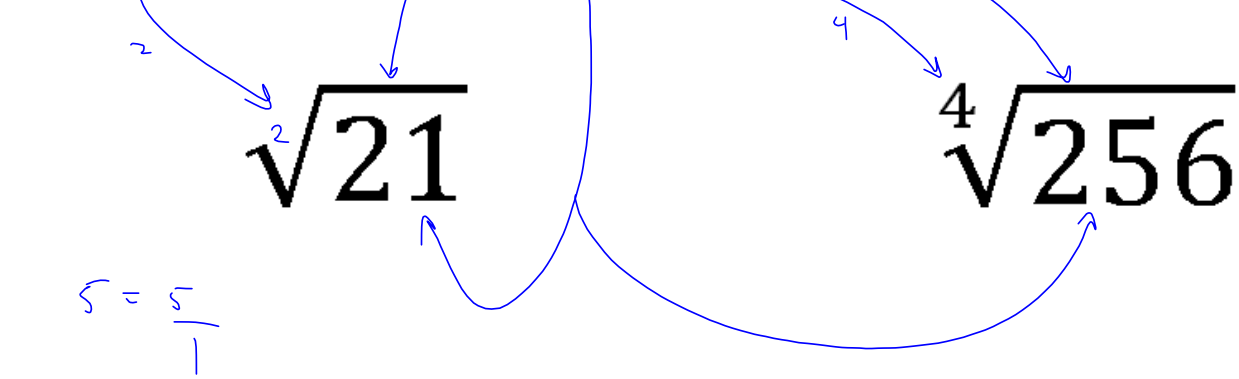
22. W at $-2\frac{1}{4}$ — R

23. X at $\sqrt{\frac{1}{4}} = \frac{1}{2}$ — R

24. Y at $2\sqrt{16}$ $2 \cdot 4 = 8$ — R

Simplifying Radicals

Parts of a radical: Label the radical symbol, radicand and index.



$5 = \frac{5}{1}$

$X = X^{1}$

PART 1: Examples: Simplify the radical.

A. $\sqrt{24}$

$= \sqrt{2 \cdot 2 \cdot 2 \cdot 3}$

$= 2\sqrt{2 \cdot 3} = 2\sqrt{6}$

24 → 6, 4 → 2, 3, 2, 2

B. $\sqrt{32}$

$= \sqrt{2 \cdot 2 \cdot 2 \cdot 2 \cdot 2}$

$= 2 \cdot 2\sqrt{2}$

$= 4\sqrt{2}$

32 → 8, 4 → 4, 2, 2, 2 → 2, 2

PART 1: Examples: Simplify the radical.

A. $\sqrt{24}$

24 → 6, 4

$= \sqrt{6 \cdot 4}$

$= 2\sqrt{6}$

B. $\sqrt{32}$

32 → 16, 2

$= \sqrt{16 \cdot 2}$

$= 4\sqrt{2}$

C. $\sqrt{48}$

48 → 16, 3

$= \sqrt{16 \cdot 3}$

$= 4\sqrt{3}$

$= \sqrt{4 \cdot 12}$

48 → 4, 12

$= 2\sqrt{12}$

$= 2\sqrt{4 \cdot 3}$

$= 2 \cdot 2\sqrt{3}$

$= 4\sqrt{3}$

D. $\sqrt{75}$