

Real Numbers and Radicals

- 1** Simplify, then add or subtract the radical expressions

$$\sqrt{7} + \sqrt{112}$$

A

$$5\sqrt{7}$$

B

$$\sqrt{7}$$

- 2** Simplify, then add or subtract the radical expressions

$$\sqrt{175} + \sqrt{7}$$

A

$$7\sqrt{7}$$

B

$$6\sqrt{7}$$

- 3** Select the narrowest description that matches this number type

$$\sqrt{\frac{20}{5}}$$

A A real number that cannot be expressed as a simple fraction (e.g., $\sqrt{2}$, π).

B A positive integer (1, 2, 3, ...).

- 4** Is this number a rational number (even if that's not its narrowest type)?

Is $\sqrt{67}$ a rational number

A

No

B

Yes

- 5** Classify this number as natural, whole, integer, rational or irrational. Pick the narrowest definition that fits.

$$\frac{\sqrt{47}}{5}$$

A

Natural Number

B

Rational Number

C

Whole Number

D

Irrational Number

- 6** Compare the two numbers. Is the first less than, equal to, or greater than the second?

$$-\frac{5}{4} \quad \bigcirc \quad -2^{-1}$$

A

<

B

=

C

>

- 7** Put these numbers in order from smallest to largest.

$$|-1|, \quad -2^{-1}, \quad \frac{1}{2}$$

A

$$|-1|, \quad \frac{1}{2}, \quad -2^{-1}$$

B

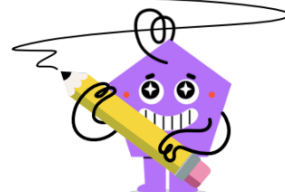
$$-2^{-1}, \quad |-1|, \quad \frac{1}{2}$$

C

$$|-1|, \quad -2^{-1}, \quad \frac{1}{2}$$

D

$$-2^{-1}, \quad \frac{1}{2}, \quad |-1|$$



Real Numbers and Radicals

- 8** Compare the two numbers. Is the first less than, equal to, or greater than the second?

$$-3\sqrt[3]{2} \quad \bigcirc \quad -\sqrt{11}$$

A

>

B

=

C

<

- 9** Compare the two numbers. Is the first less than, equal to, or greater than the second?

$$1.\overline{4} \quad \bigcirc \quad -1.32$$

A

>

B

<

C

=

- 10** Put these numbers in order from smallest to largest.

$$-2^{-1}, 0.8\overline{3}, 2^{-1}$$

A

$$-2^{-1}, 0.8\overline{3}, 2^{-1}$$

B

$$0.8\overline{3}, -2^{-1}, 2^{-1}$$

C

$$2^{-1}, -2^{-1}, 0.8\overline{3}$$

D

$$-2^{-1}, 2^{-1}, 0.8\overline{3}$$

- 11** Select the number that is a rational number

Rational Number

A

$$\frac{\sqrt{41}}{2}$$

B

$$\frac{\sqrt{43}}{8}$$

C

$$\frac{9}{16}$$

- 12** Approximate the value of 'a' in this equation

$$a^2 + 121 = 289$$

A

$$a = 15.6$$

B

$$a = 7.8$$

C

$$a = 16$$

D

$$a = 6.5$$

E

$$a = 187$$

F

$$a = 13$$

- 13** Classify this number as natural, whole, integer, rational or irrational. Pick the narrowest definition that fits.

$$-\frac{4}{9}$$

A

Whole Number

B

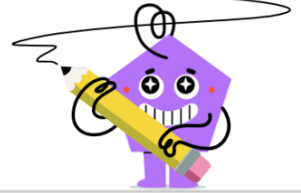
Natural Number

C

Irrational Number

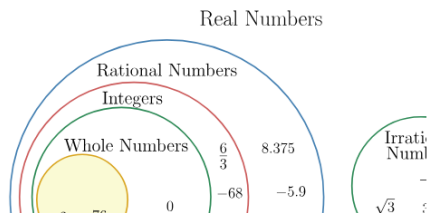
D

Rational Number



Real Numbers and Radicals

14 Select the number that would go in this grouping



A

$$-8.\overline{13}$$

B

$$\frac{0}{3}$$

C

$$\frac{12}{3}$$

15 Approximate the value of 'b' in this equation

$$7^2 + b^2 = 9^2$$

A $b = 7.7$

B $b = 8.7$

C $b = 7.4$

D $b = 1$

E $b = 5.7$

F $b = 16$

16 Approximate the value of 'c' in this equation

$$a^2 + b^2 = c^2$$

$$a = 11$$

$$b = 10$$

$$c = ?$$

A $c = 12.3$

B $c = 10.7$

C $c = 4.6$

D $c = 14.9$

E $c = 110$

F $c = 13.2$

17 Find the best approximation of the given square root

$$\sqrt{43}$$

A 5.1

B 4.4

C 8.8

D 5.8

E 7.3

F 6.6

18 Approximate the value of 'c' in this equation

$$36 + 36 = c^2$$

A $c = 10.2$

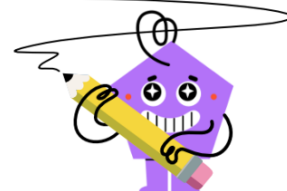
B $c = 6.8$

C $c = 8.5$

D $c = 1$

E $c = 5.1$

F $c = 9.3$



Real Numbers and Radicals

19 Approximate the value of 'b' in this equation

$$6^2 + b^2 = 10^2$$

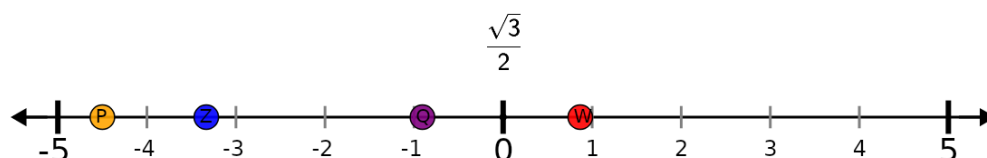
A $b = 60$	B $b = 9.7$
C $b = 7$	D $b = 12$
E $b = 4$	F $b = 8$

20 Simplify the radical

$$\sqrt{28}$$

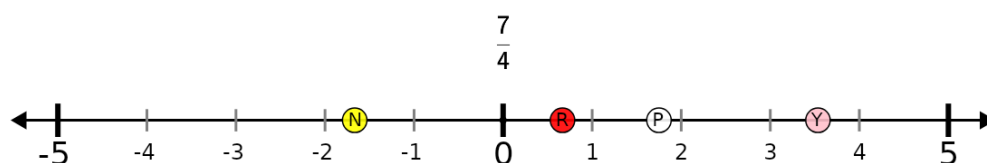
A $\sqrt{10}$	B $5\sqrt{5}$
C $3\sqrt{4}$	D $2\sqrt{7}$

21 Which dot is at this value?



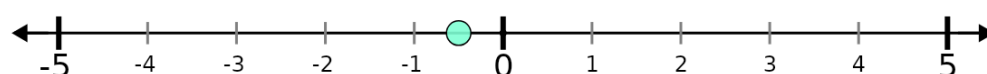
A
B
C
D

22 Which dot is at this value?

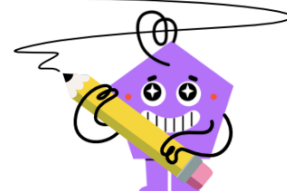


A
B
C
D

23 What number is this dot at?



A $\frac{3e}{2}$
B $-2\frac{1}{2}$
C $-\frac{1}{2}$



Real Numbers and Radicals

- 24** Simplify the radical expressions to prepare for adding or subtracting

$$\sqrt{175} + \sqrt{112}$$

A

$$5\sqrt{7} + 4\sqrt{7}$$

B

$$5\sqrt{7} + 6\sqrt{9}$$

- 25** Simplify the radical

$$\sqrt{25}$$

A

5

B

2

C

4

D

$$7\sqrt{4}$$

E

3

- 26** Find the square root of the given perfect square

$$\sqrt{9}$$

A

64

B

3

C

4

D

36

E

1

F

2

- 27** Simplify the radical

$$\sqrt{16}$$

A

3

B

6

C

5

D

1

E

4