Name **Key** Core _____ Date _____

Math 1 - Unit 1 (Square Root/Cube Root) Review

Show work OR write an explanation of how you arrived at your answer. Work or explanation is required for each problem to receive credit!!
Write the letter of your final answers in the answer box.

1. What is the sum of all the whole numbers between $\sqrt{19}$ and $\sqrt{77}$?

$\sqrt{16} = 4$ $\sqrt{64} = 8$
$\sqrt{25} = 5$ $\sqrt{81} = 9$
$\sqrt{36} = 6$
$\sqrt{49} = 7$

5
6
7
+8
—
26   (26)

2. Find the value of $\sqrt{369 - 32} - \sqrt{100}$.

$\sqrt{169} - \sqrt{100}$ 201

$13 - 10 = 3$ (3)

3. What's the approximate value of $\sqrt{20} + \sqrt{50}$?

$\sqrt{16} = 4$ $\sqrt{49} = 7$ 0.06   7.1
$4\frac{4}{9}$ $\sqrt{50} \approx 7.1$ $15\overline{)1.00}$ +4.4
$\sqrt{25} = 5$ $\sqrt{64} = 8$ -90   ———
                                    10   (11.5)

4. What is the largest whole number less than $\sqrt{103}$?

$-\sqrt{100} = 10$ to the left on # line
$-\sqrt{121} = 11$

-11 -10   (-11)
← left is less
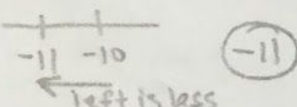
5. Simplify $\sqrt[3]{343} - \sqrt{16}$

$7 - 4 = 3$ (3)

Simplify (round to the nearest hundredth).

6. $-\sqrt{113}$ $-\sqrt{100} = -10$ 121   113   (-10.62)
                                  -100   -100
$-\sqrt{113} \approx -10.62$ 21   13
$-\sqrt{121} = -11$
                        $\frac{13}{21}$ $21\overline{)13.000}$
                                          126↓   .619 ≈ .62
                                          40
                                          -21↓
                                          190
                                          -189
                                          1

7. $\sqrt{52}$ $\sqrt{49} = 7$ 64   52
         $+3$ $\sqrt{52} \approx 7.20$ -49   -49
         $+12$ $\sqrt{64} = 8$ 15   3
         $\frac{1}{5}\frac{3}{21}$ $5\overline{)1.0}$ (7.20)

8. True or False? $\sqrt[3]{-8} < -3$

-2 < -3
false

-3 -2
left is less   (false)

9. Find the value of $\sqrt[3]{27} + \sqrt{16}$.

$3 + 4 = 7$ (7)

10. Find the value of $\sqrt{89 + 136}$.

$\sqrt{225}$
15   (15)

11. Find the value of $\frac{\sqrt{16}}{2}$. $= \frac{4}{2} = 2$ (2)

12. Find the *perimeter* of a square that has an *area* of 169 in².

$A = lw$ 13   (area) $\sqrt{169} = 13$ (Side length)
$\boxed{169}$ 13
$P = 4S$ $13 \times 4 = 52$ in   (52 in)

Answers

1. 26
2. 3
3. 11.5
4. -11
5. 3
6. -10.62
7. 7.20
8. false
9. 7
10. 15
11. 2
12. 52

13. Solve for x. $3x^2 = 81$.

$\frac{3x^2}{3} = \frac{81}{3}$

$\sqrt{x^2} = \sqrt{27}$

$x \approx 5.18$

$\sqrt{25} = 5$ 36 27

$\sqrt{27} = 5.18$ -25 $\frac{-25}{2}$ $\frac{2}{11}$

$\sqrt{36} = 6$ 11

$.181$

$11\overline{)2.000}$
$\underline{-11\downarrow}$
90

(5.18)

14. Between which two numbers is $\sqrt{151}$ located?

   A   12.0 & 12.1   **B** 12.2 & 12.3   **C**   12.4 & 12.5

$\sqrt{144} = 12$ 169 151 $\frac{2}{25}$ $25\overline{)7.00}$

$\sqrt{151} \approx 12.28$ $\frac{-144}{25}$ $\frac{-144}{7}$ $\frac{-50\downarrow}{200}$

$\sqrt{169} = 13$ $\frac{200}{0}$ (B)
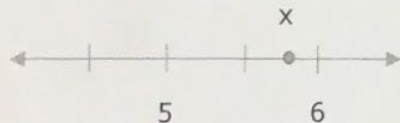
$.28$

15. Solve for x. $x^3 = -125$

$\sqrt[3]{x^3} = \sqrt[3]{-125}$

$x = -5$

(-5)

16. Use the number line to determine the best approximate value of x.

          X

5   6 (D)

   A $\sqrt{5}$ **B** $\sqrt{6}$ **C** $\sqrt{25}$ **D** $\sqrt{36}$

$\sqrt{4} \downarrow \sqrt{9}$ $\sqrt{4} \downarrow \sqrt{9}$ 5   6

$2 \leftrightarrow 3$ $2 \leftrightarrow 3$

17. Simplify $\sqrt[3]{343}$

   A 6   **B** 7   **C** 3   **D** 34

18. Solve for x. $-3x^2 + 6 = -4x^2 + 175$

$+4x^2$ $+4x^2$

$x^2 + 6 = 175$

-6 -6

$\sqrt{x^2} = \sqrt{169}$

$x = 13$

(13)

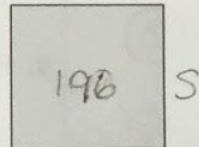**19.** Find the surface area of a cube that has a volume of 125 in^2.

$V = s^3$ $SA = s^2 \cdot 6$

$\sqrt[3]{125} = \sqrt[3]{s^3}$ $= 25 \cdot 6$

$5 = s$ $= 150 \text{ in}^2$ (5)

20. The area of this square is 196 in^2. What's the length of side, s?

$A = s^2$

$\sqrt{196} = \sqrt{s^2}$

$14 = s$ (13)
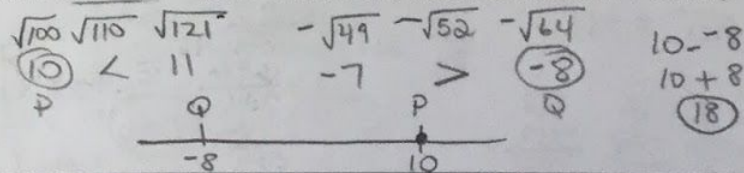
196 | S

S

21. Find the value of n if $n^2 = \frac{36}{49}$?

$\sqrt{n^2} = \sqrt{\frac{36}{49}}$

$n = \frac{6}{7}$ $(6/7)$

22. On a number line, let point P represent the largest integer value that is less than $\sqrt{110}$. Let point Q represent the largest integer value that is less than $-\sqrt{52}$. What is the distance between P and Q?

$\sqrt{100}$ $\sqrt{110}$ $\sqrt{121}$ $-\sqrt{49}$ $-\sqrt{52}$ $-\sqrt{64}$ $10 - -8$

$(10) \; < \; 11$ $-7 \; > \; (-8)$ $10 + 8$

P   Q   P   Q (18)

B

-8   10

Answers

13. 5.18

14. B

15. -5

16. D

17. B

18. 14

19. 150 in^2

20. 13

21. $6/7$

22. 18