Notes Level 2:

Notes:

Big Ideas	Examples/Details

Find the positive and negative root of the following square roots.

1) $\sqrt{64}$

2) $\sqrt{36}$

3) $\sqrt{9}$

4) $\sqrt{49}$

5) $\sqrt{1}$

6) $\sqrt{121}$

7) $\sqrt{16}$

8) $\sqrt{25}$

9) $\sqrt{0}$

10) $\sqrt{100}$

11) $\sqrt{\dfrac{64}{100}}$

12) $\sqrt{\dfrac{4}{25}}$

13) $\sqrt{\dfrac{1}{4}}$

14) $\sqrt{\dfrac{9}{49}}$

15) $\sqrt{\dfrac{81}{144}}$

16) $\sqrt{\dfrac{36}{9}}$

17) $-\sqrt{121}$

18) $-\sqrt{16}$

19) $-\sqrt{144}$

20) $-\sqrt{25}$

Worksheet Level 2:

Goals:

Calculate positive and negative roots of square roots

Practice #1

1) $-\sqrt{100}$

2) $-\sqrt{9}$

3) $\sqrt{121}$

4) $\sqrt{64}$

5) $\sqrt{25}$

6) $-\sqrt{36}$

7) $-\sqrt{25}$

8) $\sqrt{49}$

9) $-\sqrt{4}$

10) $\sqrt{36}$

11) $\sqrt{100}$

12) $-\sqrt{121}$

13) $-\sqrt{144}$

14) $\sqrt{4}$

15) $\sqrt{144}$

16) $\sqrt{81}$

17) $\sqrt{0}$

18) $-\sqrt{81}$

19) $\sqrt{9}$

20) $-\sqrt{64}$

21) $\sqrt{\dfrac{16}{121}}$

22) $\sqrt{\dfrac{4}{100}}$

23) $\sqrt{\dfrac{9}{100}}$

24) $\sqrt{\dfrac{4}{144}}$

25) $\sqrt{\dfrac{49}{64}}$

26) $\sqrt{\dfrac{1}{9}}$

Locate the following numbers on the number line below:

$\sqrt{0}$ $\quad$ $\sqrt{1}$ $\quad$ $\sqrt{4}$ $\quad$ $\sqrt{9}$ $\quad$ $\sqrt{16}$ $\quad$ $\sqrt{25}$ $\quad$ $\sqrt{36}$ $\quad$ $\sqrt{49}$ $\quad$ $\sqrt{64}$ $\quad$ $\sqrt{81}$ $\quad$ $\sqrt{100}$

Locate the following numbers on the above number line

1) $\sqrt{20}$

2) $\sqrt{32}$

3) $\sqrt{27}$

4) $\sqrt{18}$

5) $\sqrt{12}$

6) $\sqrt{75}$

7) $\sqrt{80}$

8) $\sqrt{48}$

9) $\sqrt{50}$

10) $\sqrt{8}$

Practice #3

Evaluate the expression when $h = 11$ and $m = 6$.

3. $\sqrt{4h - 8}$ $\qquad$ **4.** $-\sqrt{h^2}$ $\qquad$ **5.** $-\sqrt{24m}$ $\qquad$ **6.** $\sqrt{10m + 21}$

Notes Level 3:

Goals:

    Estimate Square Roots

    Compare and Order Rational #s and Irrational #s

Notes:

Big Ideas	Examples/Details

Level 3 Practice:

Estimate the following square roots to the nearest tenth.

1) $\sqrt{12}$

2) $\sqrt{45}$

3) $\sqrt{80}$

4) $\sqrt{50}$

5) $\sqrt{8}$

6) $\sqrt{75}$

7) $\sqrt{20}$

8) $\sqrt{27}$

9) $\sqrt{18}$

10) $\sqrt{32}$

Section 2

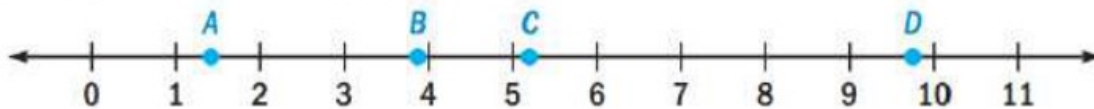**Evaluate the expression when $a = 12$ and $b = 4$.**

6. $\sqrt{a+b}$

7. $\sqrt{b^2 - a}$

8. $3\sqrt{ab+1}$

Section 3

Match each square root to the letter on the number line.

54. $\sqrt{15}$

55. $\sqrt{2}$

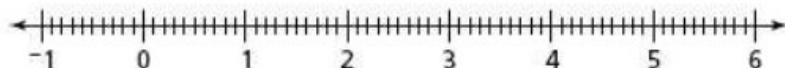**56.** $\sqrt{95}$

57. $\sqrt{27}$

Worksheet Level 3:

Goals:

Estimate Square Roots

Compare and Order Rational #s and Irrational #s

Practice #1

Arrange the following numbers on a number line.

$$\sqrt{3}, \ \frac{15}{7}, \ \sqrt{17}, \ \sqrt{36}, \ \sqrt{5}, \ 1.5, \ \sqrt{11}$$

```
◄┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼►
  ⁻1    0    1    2    3    4    5    6
```

Practice #2

Put the following set of numbers in order on a number line.

2.3	$2\frac{1}{4}$	$\sqrt{5}$	$\sqrt{2}$	$\frac{5}{2}$	$\sqrt{4}$
4	-2.3	$-2\frac{1}{4}$	$\frac{4}{2}$	$-\frac{4}{2}$	2.09

◄───►

Practice #3

1. Which statement is TRUE?

    A. The $\sqrt{18}$ is between 5 and 6.
    B. The $\sqrt{33}$ is greater than 6.
    C. The $\sqrt{11}$ is between 3 and 4.
    D. The $\sqrt{10}$ is less than 3.

2. Which statement is FALSE?

    A. The $\sqrt{52}$ is between 7 and 8.
    B. The $\sqrt{45}$ is greater than 6.
    C. The $\sqrt{83}$ is between 8 and 9.
    D. The $\sqrt{13}$ is less than 4.

Guided Practice:

- Identify the two integers that the square root is between.
- Locate the two integers on a number line.
- Locate the approximated square root on the number line between the two integers.
- Estimate the square root of each irrational number to the nearest tenth. Your answer must be on the correct "half of the half" between the two integers that are boundaries for the square root.

1. $\sqrt{28}$

2. $\sqrt{51}$

3. $\sqrt{22}$

4. $\sqrt{39}$

5. $\sqrt{27}$

6. $\sqrt{62}$

7. $\sqrt{43}$

8. $\sqrt{90}$

Notes Level 4:

Goals:

Simplify Square Roots

Simplify Square Roots involving Radicals

Notes:

Big Ideas

Examples/Details

Simplify.

1) $\sqrt{20}$

2) $\sqrt{75}$

3) $\sqrt{48}$

4) $\sqrt{18}$

5) $\sqrt{27}$

6) $\sqrt{36}$

7) $\sqrt{32n}$

8) $\sqrt{125n^2}$

9) $\sqrt{16n^3}$

10) $\sqrt{16x^4}$

11) $-4\sqrt{72x^2}$

12) $-5\sqrt{64n^4}$

Worksheet Level 4:

Goals:

Simplify Square Roots

Simplify Square Roots with Variables

Practice #1

Simplify.

1) $\sqrt{80}$

2) $\sqrt{18}$

3) $\sqrt{8}$

4) $\sqrt{50}$

5) $\sqrt{20}$

6) $\sqrt{27}$

7) $\sqrt{50p^2}$

8) $\sqrt{64x^3}$

9) $\sqrt{80n^2}$

10) $\sqrt{72k^2}$

11) $3\sqrt{50x^4}$

12) $4\sqrt{72n^3}$

Practice #2

Simplify the expression.

16. $\sqrt{18}$

17. $\sqrt{200}$

18. $\sqrt{12}$

19. $\sqrt{48}$

20. $\sqrt{125}$

21. $\sqrt{\dfrac{23}{64}}$

22. $\sqrt{\dfrac{65}{121}}$

23. $\sqrt{\dfrac{17}{49}}$

24. $\sqrt{\dfrac{22}{c^2}}$

Practice #3

Simplify each square root.

25. $\sqrt{54a^5}$

26. $\sqrt{200y^6}$

27. $\sqrt{x^3y^2}$

28. $\sqrt{a^2b^5}$

29. $\sqrt{\dfrac{4}{25}}$

30. $\sqrt{\dfrac{64}{9}}$

31. $\sqrt{\dfrac{9}{16}}$

32. $\sqrt{\dfrac{49}{25}}$

33. $\sqrt{\dfrac{3}{4}}$

34. $\sqrt{\dfrac{5}{9}}$

35. $\sqrt{\dfrac{5}{36}}$

36. $\sqrt{\dfrac{10}{49}}$

37. $\sqrt{\dfrac{8a^2}{25}}$

38. $\sqrt{\dfrac{12y^2}{49}}$