Do Now:

1. You know that one square root of a number *w* is 9. What is the other square root? What is the value of *w*?

2. Simplify the following expressions:

   a. $\sqrt{152m^4n^3}$

   b. $\sqrt{\frac{45rt^2}{144}}$

Do Now:

$\sqrt{w} = \pm 9$

1. You know that one square root of a number *w* is 9. What is the other square root? What is the value of *w*?

-9 81

2. Simplify the following expressions:

   a. $\sqrt{338b^7a^2} = \pm 13b^3a\sqrt{2b}$

   b. $\sqrt{\frac{45rt^2}{144}} = \pm \frac{3t\sqrt{5r}}{12}$

21-26

(21) $\sqrt{\frac{63}{16}} = \pm\frac{3\sqrt{7}}{4}$ 2 seconds

(22) $\sqrt{384(28)}$ $16\sqrt{42}$; 104 in/sec

(23) $\sqrt{75x^2y} \pm 5x\sqrt{3y}$

(24) $\sqrt{\frac{500n}{4y^2}} \pm \frac{5\sqrt{5n}}{y}$

(25) $\sqrt{7200m^2n^2} \pm 60mn\sqrt{2}$

(26) $\sqrt{\frac{56^2}{125}} \pm \frac{b}{5}$

(7) $\sqrt{x^2-y^2}$ ← Change

$\sqrt{16} = \pm 4$

$\sqrt{18}$ $\sqrt{25}$

$1^2=1$
$2^2=4$
$3^2=9$
$4^2=16$
$5^2=25$

9.2 Simplifying Square Roots (continued)

7.NS
8.EE

- SWBAT simplify radical expressions.
- SWBAT understand numbers; understand ways of representing numbers.

- Calculators: No

Simplify the expression.

$$\sqrt{\frac{11}{4}} = \frac{\sqrt{11}}{\sqrt{4}} = \frac{\sqrt{11}}{\pm 2} = \pm\frac{\sqrt{11}}{2}$$

$$\sqrt{\frac{81}{36}} = \frac{\sqrt{81}}{\sqrt{36}} = \frac{\pm 9}{\pm 6} = \pm\frac{9}{6} = \pm\frac{3}{2}$$

Simplify the expression.

$$\sqrt{\frac{32}{n^2}} = \frac{\sqrt{32}}{\sqrt{n^2}} = \frac{\pm 4\sqrt{2}}{\pm n} = \pm\frac{4\sqrt{2}}{n}$$

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

2|2
2|4
2|8
2|16
2|32

Simplify the expression.

a. $\sqrt{\frac{15}{16}}$

$\pm\frac{\sqrt{15}}{4}$

b. $\sqrt{\frac{80g^1}{16k^9}}$

5|5
2|10
2|20
2|40
2|80

$$= \frac{\pm 4\sqrt{5g}}{\pm 4\sqrt{k^9}}$$

$\pm 2\cdot 2\sqrt{5}$
$\pm 4\sqrt{5g}$

$9 \div 2 = 4 \text{ R } 1$

$\sqrt{k^9} = k^4\sqrt{k}$

$$= \frac{\pm 4\sqrt{5g}}{\pm 4k^4\sqrt{k}} = \pm\frac{\sqrt{5g}}{k^4\sqrt{k}}$$

(÷4 ÷4)

After a car accident, a police officer measure the length x (in feet) of a car's skid marks. The expression $\sqrt{27x}$ gives the car's speed in miles per hour at the time the brakes were applied.

$\pm 3\sqrt{3x}$

a) Write the expression in simplest form.

b) The skid marks were 125 feet long, use the simplified expression to approximate the car's speed when the brakes were applied.

$\pm 3\sqrt{3(125)}$

$= \pm 3\sqrt{375}$

$= \pm 3(5\sqrt{15})$

$= \pm 15\sqrt{15}$

$15\sqrt{15}$ mph

58.1 mph

$\pm 5\sqrt{3 \cdot 5} = \pm 5\sqrt{15}$

Exit Pass 9.2

Describe and correct the error in writing $\sqrt{72}$ in simplest form.

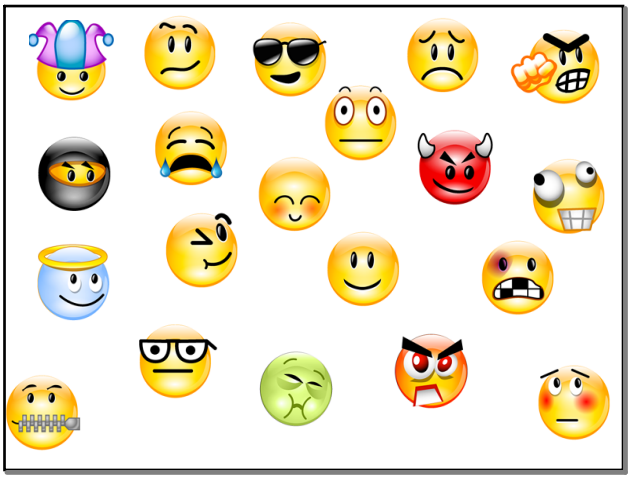
$\sqrt{72} = \sqrt{4*18}$

$= \sqrt{4} * \sqrt{18}$

$= 2\sqrt{18}$

Answers to the Quiz Review

1. ±20
2. ±14
3. ±9
4. -2
5. ±12
6. $\pm 9\sqrt{2}$
7. ±4
8. $-2\sqrt{5}$
9. $\pm 10\sqrt{3}$
10. $\pm 15\sqrt{2}$
11. ±7/12
12. -3/8
13. $\pm(7\sqrt{5})/6$
14. $\pm 10x\sqrt{10}$
15. $\pm 5\sqrt{3z}$
16. $\pm 4x^3y^6\sqrt{3x}$
17. $\pm 18x^2y\sqrt{2z}$
18. $2\sqrt{65}$ ft



#1

#2

#3

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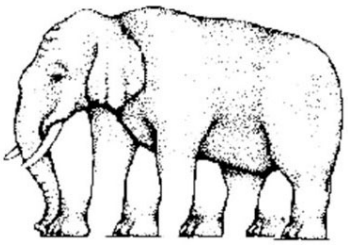
#15

#16

How many legs does the elephant have?



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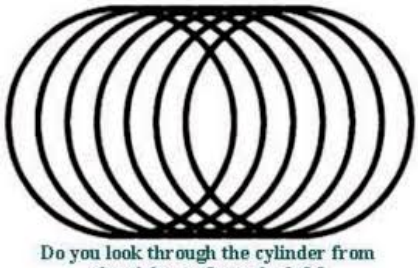

Do you look through the cylinder from the right, or from the left?

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