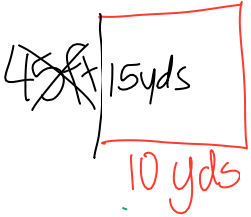Have out practice review for me to come check while you are doing your warmup

Warmup

1) Find the area in yds

$4~\cancel{ft}$ | 15yds
10 yds

3ft = 1yd

$45\cancel{ft} \cdot \dfrac{1yd}{3\cancel{ft}} =$

15yds

$10 \times 15 = \boxed{150 \, yds^2}$

2) Rat or IRR?

$\dfrac{1}{3}\left(\dfrac{3}{\pi}\right)$

IRR

non terminate
not repeating

3) Simplify

$(4x^2 - 3x + y) - (2x^2 - 4y + 3)$

$4x^2 - 3x + y - 2x^2 + 4y - 3$

$\boxed{2x^2 + 5y - 3x - 3}$

1. Jimmy is spending twelve less than double the amount of money that Jane spends on groceries. If Jane spends x amount of dollars, write an **expression** that represents the amount that Jimmy spends.
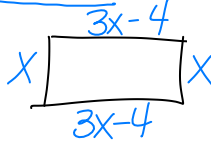
   $2x - 12$

2. Ashley is 6 years less than triple her grandfather's age. What would be the **expression** for this?

   $3x - 6$

3. We are building a pen for our pigs. One side is 4 less than triple the other. Write an expression for the perimeter. you know how much fencing to buy for the pigs?

   $3x - 4$
   x
   $3x - 4$
   x

   $\boxed{8x - 8}$

   $3x - 4$

   $x \fbox{ } x$

   $3x - 4$

4. **Simplify** the following
   a. $(4x^3 + 1x - 6) + (x^2 + 2x + 5)$

   $4x^3 + 3x - 1 + x^2 \rightarrow \boxed{4x^3 + x^2 + 3x - 1}$

   b. $(5xy - 4x + 9y^2) - (10 - 18x + 9xy)$

   $5xy - 4x + 9y^2 - 10 + 18x - 9xy$

   $-4xy + 14x + 9y^2 - 10$

5. **Multiply** the following polynomials
   a. $(4x - 1)(5x + 4)$

   $\boxed{20x^2 + 11x - 4}$

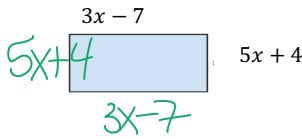 | | $5x$ | $-5x$ |
   |---|---|---|
   | 4 | $20x^2$ | |
   | | $16x$ | -4 |

   $4x - 1$

   b. $x^4(5x^4 - 10x^3 + x^2 - 9x + 14)$

   $\boxed{5x^8 - 10x^7 + x^6 - 9x^5 + 14x^4}$

6. Calculate the **area** and **perimeter** of the rectangle

   Area: $15x^2 - 23x - 28$ Perimeter: $16x - 6$

   Multiply

   $3x - 7$

   $5x + 4$ [rectangle] $5x + 4$

   $3x - 7$

   ADD
   $3x - 7$
   $5x + 4$
   $3x - 7$
   $5x + 4$

	$3x$	-7
$5x$	$15x^2$	$-35x$
4	$12x$	-28

7. What is the coefficient in the term $5x^4$? ____ 5 ____ What does **coefficient** mean? (explain in words)

   # in front of variable

8. How many terms does the expression have: $3x^4 + 2x^3 + 5xy + 4$
   What is a term? How are terms split up?

   separated by + or −

   4

9. a. Simplify $\sqrt{6}(3 - \sqrt{3})$

   $3\sqrt{6} - 1\sqrt{18} = $

   $\boxed{3\sqrt{6} - 3\sqrt{2}}$
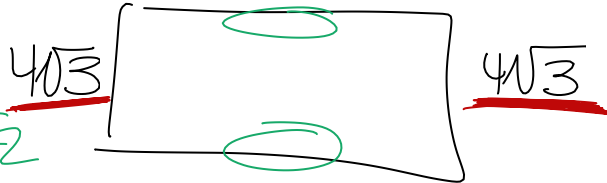
   b. Simplify $(4 - 2\sqrt{3})(7 + 6\sqrt{3})$

   $4 \quad -2\sqrt{3}$

	28	$14\sqrt{3}$
7		
$6\sqrt{3}$	$24\sqrt{3}$	-36

   $-8 + 10\sqrt{3}$

10. Simplify the following: $\sqrt{300x^4y^7}$

    $2 \cdot 5 \cdot x \cdot x \cdot y \cdot y \cdot y \sqrt{3y}$

    $\boxed{10x^2y^3\sqrt{3y}}$

11. A rectangle has a total perimeter of $\sqrt{72}$ and a side length of $4\sqrt{3}$. What is the length of the other side?
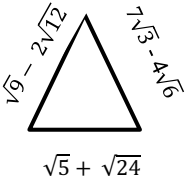
    $4\sqrt{3}$ [rectangle] $4\sqrt{3}$

    Perimeter $= \sqrt{72}$

    $\sqrt{72} - 8\sqrt{3} = \dfrac{6\sqrt{2} - 8\sqrt{3}}{2} = \dfrac{6\sqrt{2}}{2} - \dfrac{8\sqrt{3}}{2}$

    $\boxed{3\sqrt{2} - 4\sqrt{3}}$
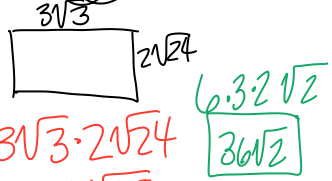
$\boxed{3\sqrt{3} - 2\sqrt{6} + 3 + \sqrt{5}}$

12. Find the perimeter of the following:

Triangle with sides: $\sqrt{9} - 2\sqrt{12}$ (left), $7\sqrt{3} - 4\sqrt{6}$ (right), $\sqrt{5} + \sqrt{24}$ (bottom)

one piece @ a time

$\sqrt{9} - 2\sqrt{12} + 7\sqrt{3} - 4\sqrt{6} + \sqrt{5} + \sqrt{24}$

$3 - \cancel{4\sqrt{3}} + 3\sqrt{3} - \cancel{4\sqrt{6}} + \sqrt{5} + 2\sqrt{6}$

13. Your grandmother has bought a rectangular table that has side lengths of $3\sqrt{3}$ on two sides and $2\sqrt{24}$ on the other two sides. What would be the (area) of the table your grandmother has?

Rectangle labeled $3\sqrt{3}$ (top) and $2\sqrt{24}$ (right)

$3\sqrt{3} \cdot 2\sqrt{24}$ $6 \cdot 3 \cdot 2\sqrt{2}$

$6\sqrt{72}$ $\boxed{36\sqrt{2}}$

14. Your pool is filling up at a rate of 1200 gallons/hour. What would be the speed in liters/second?
(1 gallon = 3.785 liters)

$\dfrac{1200 \text{ gal}}{1 \text{ hr}} \cdot \dfrac{1 \text{ hr}}{60 \text{ min}} \cdot \dfrac{1 \text{ min}}{60 \text{ sec}} \cdot \dfrac{3.785 L}{1 \text{ gal}} = \boxed{1.262 L/sec}$

15. You are driving at a speed of 90 meters/hour. What is your speed in inches/min? (3.3 ft = 1 m, 12 in = 1 ft)

$\dfrac{90 m}{1 \text{ hr}} \cdot \dfrac{1 \text{ hr}}{60 \text{ min}} \cdot \dfrac{3.3 ft}{1 m} \cdot \dfrac{12 in}{1 ft} = \boxed{59.4 \text{ in/min}}$

16. The approximate distance from EJCHS to Walmart is 18 miles. What would be the distance centimeters?
(1 km = 0.621 miles)

$\dfrac{18 \text{ miles}}{1} \cdot \dfrac{1 km}{0.621 \text{ miles}} \cdot \dfrac{100000 cm}{1 km} = \boxed{2{,}898{,}550.725 \text{ cm}}$

17. The distance that Mrs. Forrester walks around the classroom is 14,500 feet per week. What is the distance in km per hour? (2.54 cm = 1 in)

$\dfrac{14500 ft}{1 wk} \cdot \dfrac{12 in}{1 ft} \cdot \dfrac{2.54 cm}{1 in} \cdot \dfrac{1 km}{100000 cm} \cdot \dfrac{1 wk}{7 days} \cdot \dfrac{1 day}{24 hrs}$

$\boxed{0.0263 \text{ km/hr}}$

18. State if the value is rational or irrational

$4\sqrt{8} + 7 - 5\sqrt{2} = 3\sqrt{2} + 7$

a. Rational or Irrational? (circle one)

b. Explain (how do you know):

The decimal does not terminate

19. State if the value is rational or irrational: $\sqrt{121} -$

$\sqrt{25} + 4 = 10$

a. Rational or irrational? (**circle one**)

b. Explain (how do you know)

Whole #

20. The **product** of two **rational** numbers is (always) / **sometimes / never** rational. (circle the best choice)

a. Show 2 examples of this with numbers

$4 \cdot \dfrac{1}{2} = 2$ $1.5 \times 1.5 = 2.25$

21. The **sum** of two **irrational** numbers is **always** / (sometimes) / **never** irrational. (circle the best choice)

a. Show 2 examples of this with numbers

$\sqrt{3} + -\sqrt{3} = 0$ $\pi + \pi = 2\pi$

22. Use the formula given: $d = v^2 t$ where velocity, v, is cm/sec and time, t, is sec. What are the units for d?

$\left(\dfrac{cm}{sec}\right)^2 \cdot sec = \dfrac{cm^2}{sec^2} \cdot \dfrac{sec}{1} = \dfrac{cm \cdot cm}{sec \cdot sec} \cdot \dfrac{sec}{1}$

$\boxed{\dfrac{cm^2}{sec}}$