

Name \_\_\_\_\_  
Mrs. Roubos

Date \_\_\_\_\_  
8R Period \_\_\_\_\_

Review for 8R Midterm Part II's

22) The weights, in ounces, of different animals are shown in the table below:

| Animal   | Weight (ounces)      |
|----------|----------------------|
| Elephant | $6.23 \times 10^3$   |
| Cat      | $1.28 \times 10^2$   |
| Mouse    | $3.2 \times 10^{-2}$ |
| Zebra    | $1.6 \times 10^2$    |

**Part A:**

What is the combined weight of the elephant and the zebra?

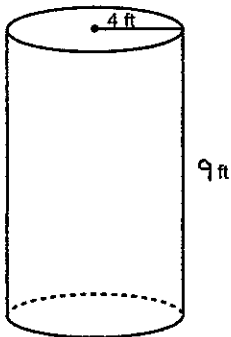
Write answer in scientific notation.

**Part B:**

How many times heavier than a mouse is a zebra.

Write answer in standard form.

23) Find the volume of the following cylinder. Round your answer to the nearest tenth.



$$V = \pi r^2 h$$

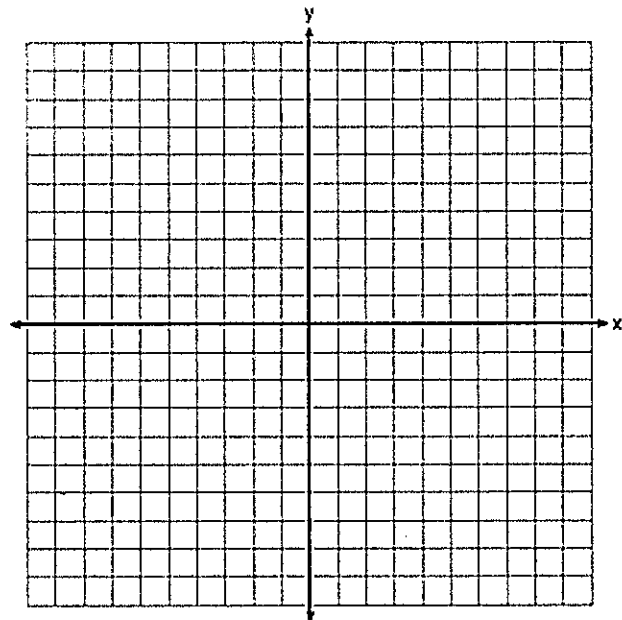
24) Solve the following system of equations for  $x$  and  $y$  algebraically. Show all your work.

$$4x + 2y = 6$$

$$y = -3x - 1$$

25) a) Graph line segment  $\overline{CD}$  with coordinates  $C(-5,4)$  and  $D(2,-4)$ .

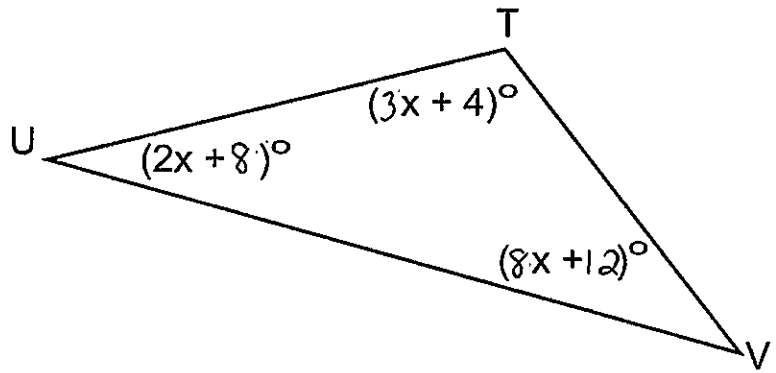
b) Find the length of  $\overline{CD}$ .  
To the nearest tenth



c) Between which two consecutive integers does that length lie?

26) Given the following diagram of  $\triangle TUV$

A. Solve for  $x$

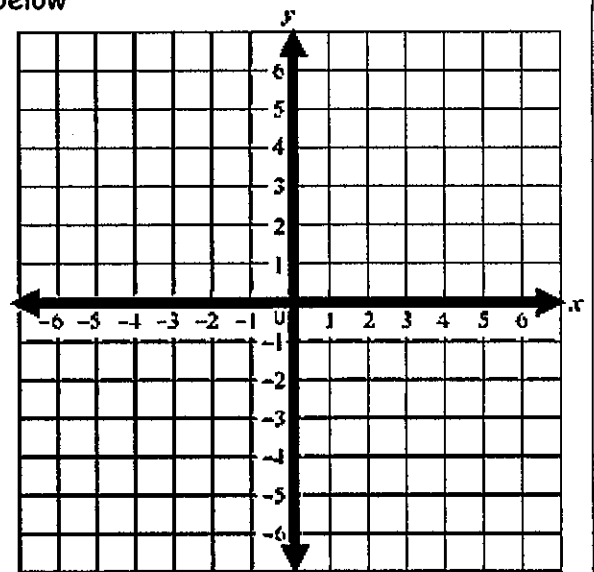


B. Solve for the  $m < T$

27) A. Graph and label the equations on the coordinate grid below

$$y = x + 5$$

$$y = -\frac{1}{2}x + 2$$



B. What is the solution to the system?

( \_\_\_\_\_ , \_\_\_\_\_ )

28) Sally saves the same amount of money each month in her bank's savings account. The amount of money she saved after different numbers of months is shown in the following table.

| Months of savings,<br>$x$ | Total Amount saved (in \$),<br>$y$ |
|---------------------------|------------------------------------|
| 2                         | 400                                |
| 4                         | 1200                               |
| 6                         | 2000                               |
| 8                         | 2800                               |

Part A: Determine the **rate of change** for the function. \_\_\_\_\_

Part B: Determine the **y-intercept** for the function. \_\_\_\_\_

Part C: Write the **equation** that represents this function in  $y = mx + b$  form. \_\_\_\_\_

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22) The weights, in ounces, of different animals are shown in the table below:

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| Zebra    | $1.6 \times 10^2$    |

★

★

Part A:

Add

What is the combined weight of the elephant and the zebra?

Write answer in scientific notation.

$$(6.23 \times 10^3) + (1.6 \times 10^2) = \boxed{6.39 \times 10^3}$$

(2nd) (DRG) → (SC1)  
for scient. notation.

Part B:

Divide

How many times heavier than a mouse is a zebra.

Write answer in standard form.

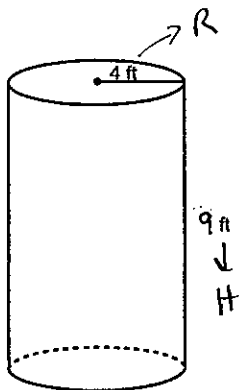
$$(1.6 \times 10^2) \div (3.2 \times 10^{-2}) = \boxed{5000}$$

↑  
Bigger # 1<sup>st</sup> (Bigger Exponent) must go 1<sup>st</sup>

★ Can put right into the calculator to get the answer  
★ Must use ( )

(2nd) (DRG) ← (FLO)

23) Find the volume of the following cylinder. Round your answer to the nearest tenth.



$$V = \pi r^2 h \quad \text{use the } \pi\text{-button!}$$

$$V = (\pi) \cdot (4)^2 \cdot (9)$$

$$V = (\pi) \cdot 16 \cdot 9$$

$$\boxed{V = 452.4 \text{ ft}^3}$$

$$V = \pi r^2 h$$

Radius height

24) Solve the following system of equations for x and y algebraically. Show all your work.

$$4x + 2y = 6$$

$$y = -3x - 1$$

substitute  
into the y-value

$$4x + 2y = 6$$

Distribute  $4x + 2(-3x - 1) = 6$

Combine  $4x - 6x - 2 = 6$

More Solve  $-2x - 2 = 6$

$$\begin{array}{r} -2x - 2 = 6 \\ \quad \quad \quad +2 \quad +2 \\ \hline -2x = 8 \\ \quad \quad \quad -2 \quad -2 \\ \hline x = -4 \end{array}$$

$$\begin{array}{r} -2x = 8 \\ -2 \quad -2 \\ \hline x = -4 \end{array}$$

$$x = -4$$

$$y = -3x - 1$$

$$y = -3(-4) - 1$$

$$y = 12 - 1$$

$$y = 11$$

$$(-4, 11)$$

25) a) Graph line segment  $\overline{CD}$  with coordinates  $C(-5, 4)$  and  $D(2, -4)$ .  $\downarrow$  make a right triangle

b) Find the length of  $\overline{CD}$ .

To the nearest tenth

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

$$8^2 + 7^2 = c^2$$

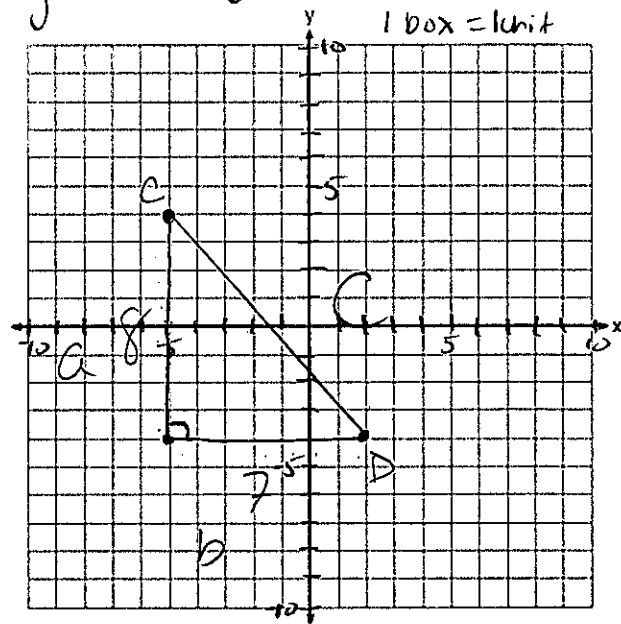
$$64 + 49 = c^2 \rightarrow \boxed{2nd} \boxed{x^2}$$

$$\sqrt{113} = c^2$$

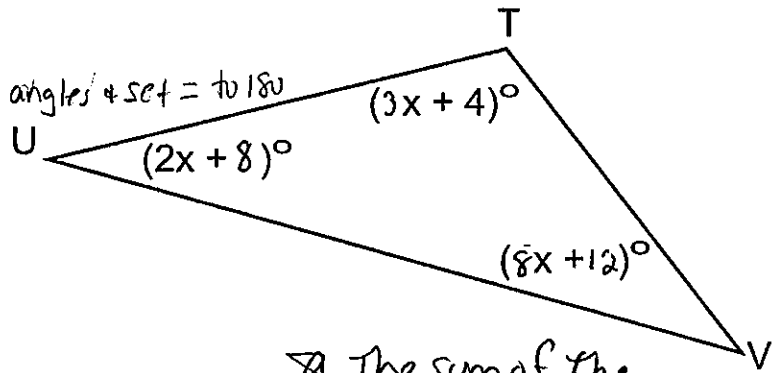
$$c = 10.6$$

c) Between which two consecutive integers does that length lie?  $\downarrow$  2 #'s in a row

$$10 + 11$$



26) Given the following diagram of  $\triangle TUV$



A. Solve for x  $\Rightarrow$  Add up all of the angles + set = to 180

Combine  
Move  
Solve

$$2x + 8 + 3x + 4 + 8x + 12 = 180$$

$$13x + 24 = 180$$

$$\begin{array}{r} -24 \quad -24 \\ \hline 13x = 156 \\ \hline \frac{13x}{13} = \frac{156}{13} \\ \hline x = 12 \end{array}$$

$\Rightarrow$  The sum of the 3 interior angles of a triangle is  $180^\circ$

B. Solve for the  $m\angle T \rightarrow$  plug into the expression for T

means measure of

$$m\angle T = 3x + 4$$

$$m\angle T = 3(12) + 4$$

$$m\angle T = 36 + 4$$

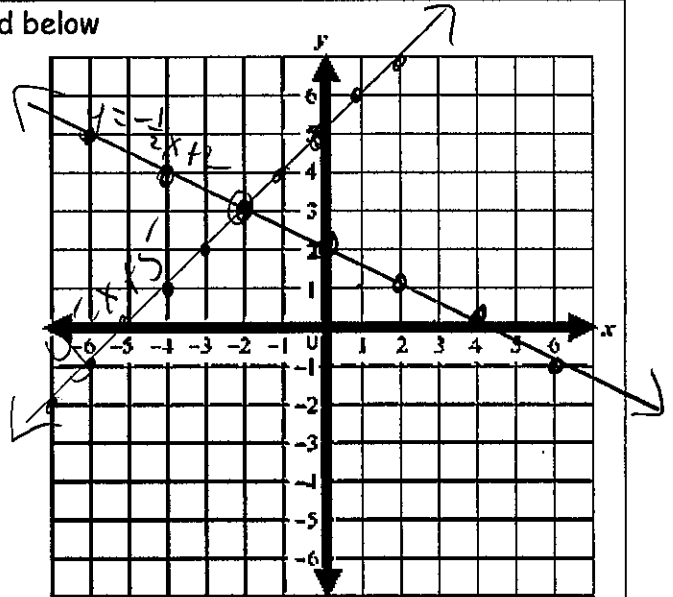
$$m\angle T = 40^\circ$$

27) A. Graph and label the equations on the coordinate grid below

$$y = x + 5$$

$$y = -\frac{1}{2}x + 2$$

|                                  |   |
|----------------------------------|---|
| $y = x + 5$                      | $y = -\frac{1}{2}x + 2$                     |
| $m_{\text{ave}} = 1 \rightarrow$ | $m_{\text{ave}} = -\frac{1}{2} \rightarrow$ |
| $B = 5$<br>y-intercept           | $B = 2$<br>y-intercept                      |



B. What is the solution to the system? *where they intersect*

$$(-2, 3)$$

28) Sally saves the same amount of money each month in her bank's savings account. The amount of money she saved after different numbers of months is shown in the following table.

| Months of savings,<br>x | Total Amount saved (in \$),<br>y |
|-------------------------|----------------------------------|
| 2                       | 400                              |
| 4                       | 1200                             |
| 6                       | 2000                             |
| 8                       | 2800                             |

Part A: Determine the <sup>slope: m</sup> rate of change for the function.  $\frac{400}{m}$

$$(2, 400) \quad (4, 1200)$$

$$x_1 \quad y_1 \quad x_2 \quad y_2$$

$$m = \frac{y_2 - y_1}{x_2 - x_1} \quad m = \frac{1200 - 400}{4 - 2} \quad m = \frac{800}{2} \quad m = 400$$

Part B: Determine the <sup>b</sup> y-intercept for the function.  $\frac{-400}{b}$

$$(2, 400)$$

$$x \quad y$$

$$m = 400$$

$$y = mx + b$$

$$400 = 400(2) + b$$

$$400 = 800 + b$$

$$\begin{array}{r} -800 \quad -800 \\ \hline \end{array}$$

$$-400 = b$$

Part C: Write the equation that represents this function in  $y = mx + b$  form.

$$y = m x + b$$

$$m = 400$$

$$b = -400$$

$$\underline{y = 400x - 400}$$