Final 097/ Spring 2019 **Form B**

First name (Please Print)	Last name (Please Print)	Your Instructor's name	Test score

You must show work to receive credit.

1) Use the order of operations to calculate $7-4(3-5)^2$.

_____ **(3 points)**

2) Add $5^{-2}+\frac{1}{5}$ and report your answer **as a fraction**.

_____ **(3 points)**

3) The thickness of a US dime is approximately 5.3×10^{-2} inches. Write this number in standard notation.

_____ **(2 points)**

4) The radius of the Jupiter is about 44,368 miles. Write this number in scientific notation.

_____ **(2 points)**

5) Expand and combine like terms: $(t-7h)(t+7h)$

_____ **(2 points)**

6) A flat screen television is on sale for 30% off of its original price. Let P represent the original price of the television.

a) Write an expression for D the amount of discount in terms P.

$D=$ _____ **(2 points)**

b) Find the amount of discount if the original price of the television is \$980.

$D=$ _____ **(1 point)**

7) Evaluate: $\sqrt{b^2 - 4ac}$ when $a = 7$, $b = -5$, and $c = -2$.

_____ **(3 points)**

8) Simplify and **write the result with only positive exponents**: $\dfrac{16y^5}{2y^7}$

_____ **(3 points)**

9) Simplify: $(m^{-3})^{-2}(m^4)^5$

_____ **(3 points)**

10) Simplify and combine like terms: $4(3k-2)-8(k-1)$

_____ **(3 points)**

11) Solve: $5(2y+1)-2y=45$

$y =$ _____ **(3 points)**

12) A calculus class has 80 students, and 44 of them are women. What percent of the students are **men**?

_____ **(3 points)**

13) Factor completely: $3yz + 9y^2z^2$

_____ **(3 points)**

14) Factor completely: $x^2 - 64$

_____ **(3 points)**

15) Factor completely: $x^2 + 2x - 15$

_____ **(3 points)**

16) Solve: $x^2 - 7x + 10 = 0$

$x =$ _____ $x =$ _____ **(4 points)**

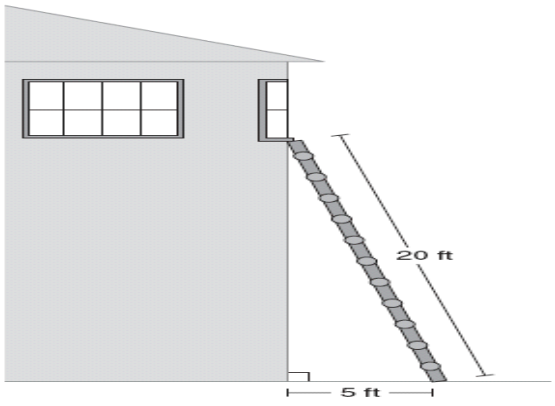
17) Solve $w(w-3) = 0$

$w =$ _____ $w =$ _____ **(3 points)**

18) Solve: $\frac{x}{3} - \frac{1}{2} = \frac{1}{6}$

$x =$ _____ **(4 points)**

19) A 20-foot ladder is leaning against a window as shown in the figure. How high does the ladder reach? **Round your answer to two decimal places.**



_____ **(4 points)**

20) **Write the letter of the correct answer in the box.** The slope of the line $x = 5$ is:

A) 0 B) 5 C) Undefined D) -5

(2 points)

21) Fill in the table for: $2x - y = 5$

x	y
	1
-1	

(4 points)

23) Solve $2y - 8x = 16$ for y. **Report your answer in reduced form.**

$y =$ _____ **(3 points)**

24) Find the x-intercept and the y-intercept of $x - 7y = 21$.

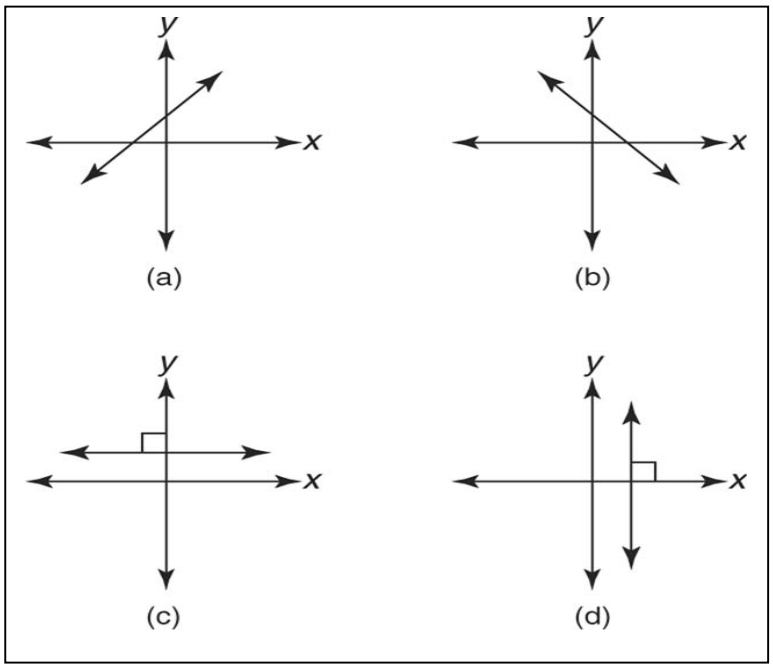
x-intercept: (_____ , _____) **(2 points)**

y-intercept: (_____ , _____) **(2 points)**

24) Find the slope of the line through the points $(1,5)$, and $(-3,-7)$.

slope = _____ **(3 points)**

25) Match the letter of the graphs with given slopes.



Undefined _____

Positive _____

Negative _____

Zero _____

(4 points)

26) The amount you pay for downloading songs from an online store can be calculated according to $A = 0.99N + 25$, where A is the total charge in dollars for downloading N songs.

a) Find the total charge for downloading 20 songs.

_____ **(2 points)**

b) How many songs did you download if the total charge was $39.85?

_____ **(3 points)**

c) What is the slope of this line?

_____ **(2 points)**

d) Write a sentence about the meaning of the slope in this context using the appropriate units.

(2 points)

27) The length L of a rectangle is 8 feet longer than twice its width W.

a) Write an expression for the length L in terms of the width W.

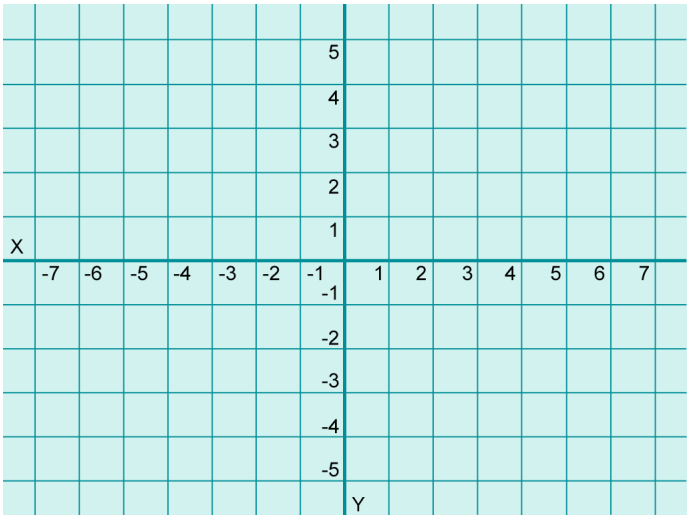
$L =$ _____ **(2 points)**

b) Write an expression for the perimeter P in terms of the width W and simplify it.

$P =$ _____ **(3 points)**

28) The equation of line **A** is $x + y = 3$, and the equation of line **B** is $x - y = 1$.

a) Graph both lines **A** and **B** on the grid below and clearly label them.



(4 points)

b) Use the graphs in part "a" to solve the system of linear equations $\begin{cases} x + y = 3 \\ x - y = 1 \end{cases}$

(_____ , _____) **(3 points)**

Extra credit

In 2007 a single taxpayer received up to a maximum of $600 on what was called an Economic Stimulus checks. However, if the single person's adjusted income was more than $75,000, he or she would receive $600 minus 5% of the amount over $75000.

a) A single taxpayer's adjusted income in 2007 was $81,000. What would be the amount of stimulus check for this person?

_____ **(2 points)**

b) At what income level will the amount of the stimulus check for a single taxpayer become zero?

_____ **(2 points)**