Part 1

1. Solve for x

$x^2 + 10x + 4 =$ ☐

(Use a comma to separate answers. Type exact answers, using radicals as needed. Type N if there is NO solution

2. Solve for R

$r^2 + 3R = 5$

The solution are r= ☐

(Use a comma to separate answers Type N if there is no solution.

3. The width of a rectangle is 2 ft less than the length. The area is $3ft^2$. Find the length and the width.

The width is ☐ ft.

The length is ☐ ft

4. Find and label the vertex and the line of symmetry. Graph the function

$f(x) = 2(x-2)^2$

The vertex is ☐

(type the ordered pair)

The equation of the line of Symmetry is

x = ☐

Part 1

5. Find the vertex, the line symmetry, the maximum or minimum value of the quadratic function, and graph the function. $f(x) = 4x^2 - 40x + 102$

The vertex is ☐ (type an ordered pair)

Choose the correct line of symmetry below

A. $y = 2$	B. $y = -2$	C. $x = -5$	D. $x = 5$

6. Complete

$1296\ in^2 = [?]\ ft^2$

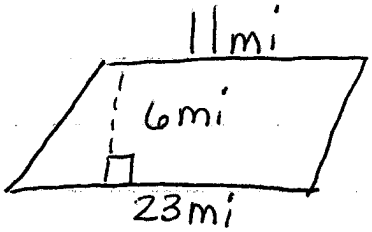
(Simplify your answer. Type an integer or a decimal)

7. Complete

$0.072\ m^2 =$ ☐ cm^2

(Simplify your answer. Type an integer or a decimal)

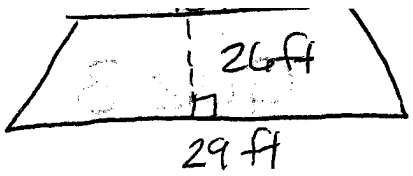
8. Find the area



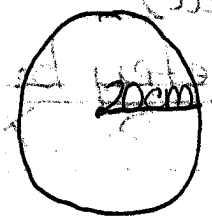
The area is ☐ mi^2

(Simplify your answer. Type an integer or a decimal)

9. Find the area



The area is ☐ ft^2
(Simplify your answer. Type an integer or a decimal)

10. 

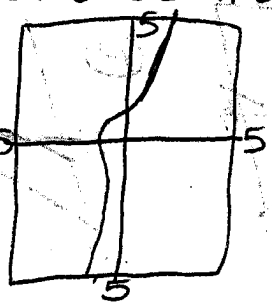
Find the circumference of the circle. Use $\frac{22}{7}$ for π

The circumference of the circle is ☐ cm
(Simplify your answer. Type an integer or a fraction)

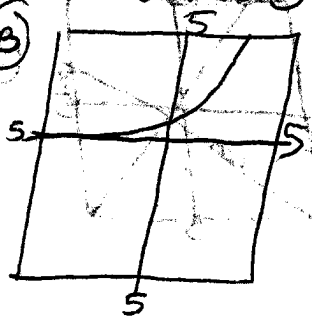
Part 2

1. Graph function on paper, and then choose the graph $f(x) = 3^x$) (2 parts)

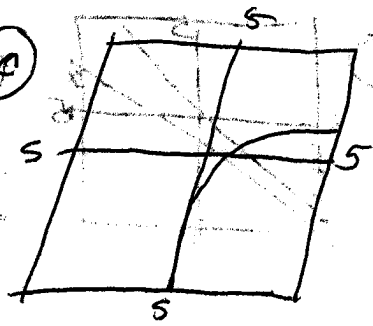
(A)



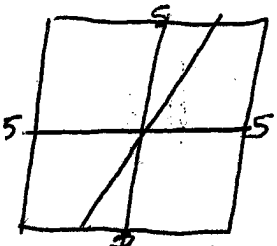
(B)



(C)

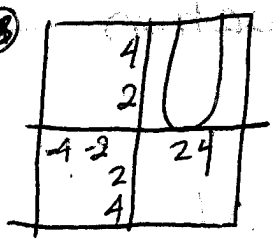


(D)

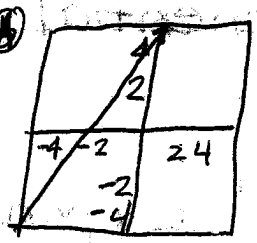


2. Graph the function on paper, and then choose the correct graph $f(x) = 4^x - 3$ (2 parts)

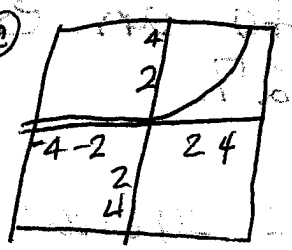
(A)



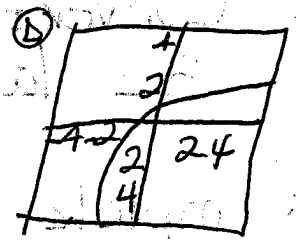
(B)



(C)



(D)



3. Determine whether the function is one to one. If it is, find a formula for its inverse.

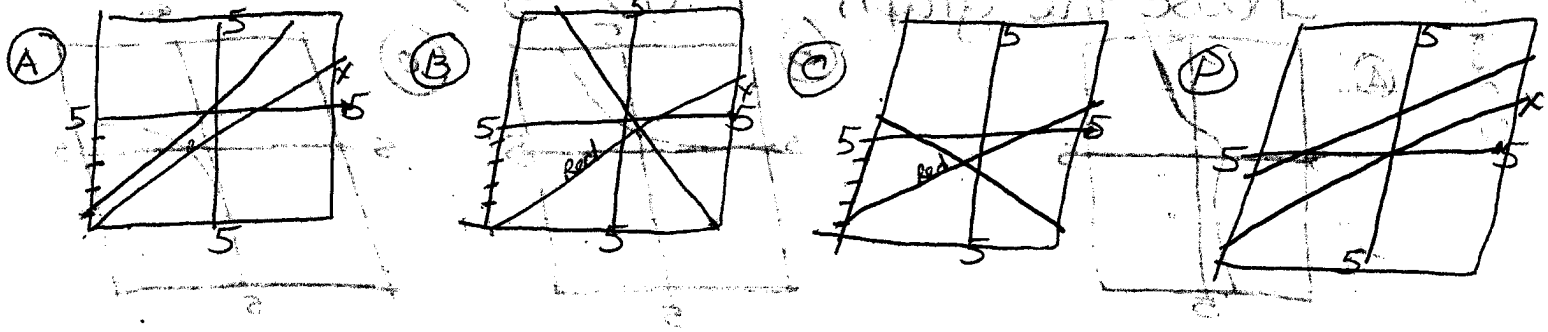
$f(x) = 6x - 12$

Is the function one to one = yes or NO

4. Graph the inverse of the function Part 2

$f(x) = \frac{2}{3}x - 1$

Choose the original function in red and the inverse of the function in blue

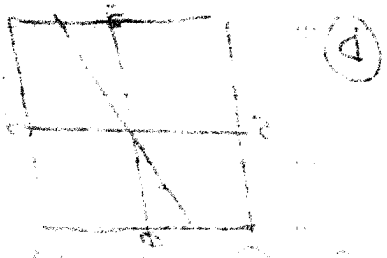


5. Find $(f \circ g)(x)$ and $(g \circ f)(x)$

$f(x) = 6x^2 + 6$; $g(x) = 6x - 1$

$(f \circ g)(x) = \square$

(Simplify your answer)



6. Convert to an exponential equation

$3 = \log_3 27$

Complete the equivalent exponential equation $\square^{\square} = 27$

(Simplify your answer. Type in exponential form)

1. Express the difference of logarithms

$\log_b \left(\frac{18}{13}\right) =$

(Use Integers or fractions for any numbers in the expressions)

8. Express as a sum of logarithms
$\log_4 (23 \cdot 24) =$

9. Use a calculator to find the natural logarithm, base e $\ln 0.0281 =$
(Simplify your answer. Type an integer or a decimal. Round to 4 decimal places if needed)

10. Solve for x $2^{2x-7} = 4$
The solution is $x =$ ☐
(Simplify your answer. Type an integer or a fraction. Use a comma to separate answers. Type N if the solution is not a real number)