Key

Mid Term Review

Form Number 1 Name: _____

1. Which set of numbers has mean 36?

   [A] {28, 34, 21, 47, 20, 48, 61}

   [B] {30, 47, 37, 32, 44, 25, 37}

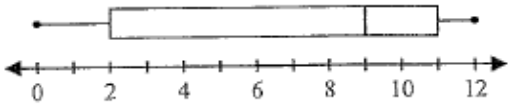
   [C] {24, 20, 29, 27, 42, 38, 39}

   [D] {47, 31, 22, 48, 40, 46, 64}

2. In math, Elana has test scores of 91, 90, 83, and 77 on the first 4 of 5 tests. What score does Elana need on the fifth test to have a mean score of 87?

   94

3. What is the interquartile range of the data shown in the box plot below?



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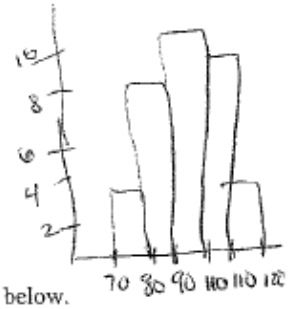
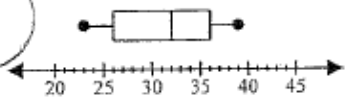


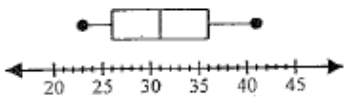
4. The golf scores for the 33 members of the Belmont Country Club are given below.
   {101, 72, 84, 113, 97, 76, 105, 89, 118, 97, 86, 119, 78, 93, 105, 104, 92, 81, 99, 88, 103, 97, 101, 85, 92, 84, 106, 104, 93, 85, 97, 108, 92}
   Construct a histogram of the scores using a bin width of 10.

5. Which is a box plot for the following data?
   {31, 25, 33, 36, 39, 36, 26, 39, 36, 25, 32, 31, 29, 23, 32}

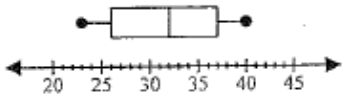
[A]



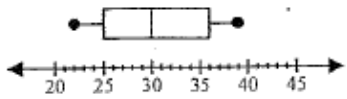
[B]



[C]



[D]



6. You weigh six packages and find their masses to be 26, 20, 50, 23, 47, and 44 kilograms. If you include a package that weighs 140 kilograms, which will increase more, the median weight or the mean weight?

1. Which set of numbers has mean 36?

2.. In math, Elana has test scores of 91, 90, 83, and 77 on the first 4 of 5 tests. What score does

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Write the intercept form of the line $4x-5y-4=0$. $y=\frac{4}{5}x-\frac{4}{5}$

Which of these related quantities is the dependent variable?
Number of videos rented, total cost

total cost

9. Graph each system of equations. Then determine whether the system has one solution, no solution, or infinitely many solutions. If the system has one solution, name it.

$\begin{cases} 3x+2y=5 \\ 3x-y=11 \end{cases}$ $(3,-2)$

10. Find the point (x, y) where the pair of lines intersect.

$\begin{cases} 2y=-2x+16.2 \\ 2y=-4x+22.8 \end{cases}$ $(3.3, 4.8)$

11. Find the point (x, y) where the pair of lines intersect.

$\begin{cases} y=2x-3 \\ y=-3x+2 \end{cases}$ $(1,-1)$

12. Determine whether $(4, 4)$ is a solution of the system of equations:

$\begin{cases} 3x-3y=0 \\ 2x-4y=-8 \end{cases}$ $(4,4)$ yes

Use elimination to solve the system of equations.

13. $\begin{cases} 9x-8y=68 \\ 3x-5y=32 \end{cases}$ $(4,-4)$

14. $\begin{cases} 2x+5y=1 \\ x+4y=-2 \end{cases}$

[A] $\left(\frac{14}{3}, -\frac{5}{3}\right)$ [B] $\left(-\frac{22}{3}, -\frac{4}{3}\right)$ [C] $\left(-\frac{13}{3}, \frac{4}{3}\right)$ [D] No solution

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Use elin1i11ati011t0 solve the system of equations.

15. Answer each question and show all work clearly on a separate piece of paper.
Solve each system of equations.

a. $\begin{cases} -5x-6y=-10 \\ 2x+3y=1 \end{cases}$ (8, -5)

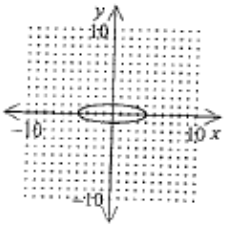
b. $\begin{cases} 12y=x-5 \\ -2x+9y=5 \end{cases}$ (-7, -1)

16. Given $f(x)=x^2-2x+17$, find $f(3)$. 20

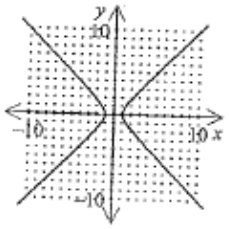
17. If $P(x)=x^2-3x-3$, find $P(1)$. [A] -1 [B] -5 [C] 5 [D] 1

18. Determine which relation is a function.

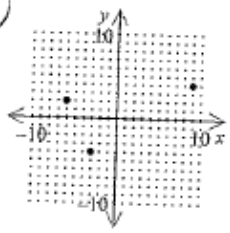
[A]



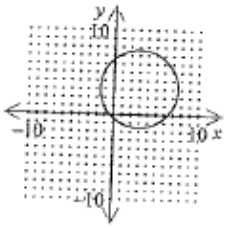
[B]



[C]



[D]



19. Given $f(x)=x^2-4x-4$, find $f(-2)$. 8

20. If $f(x)=2x^2-6x+4$, find $f(2)$ and $f(-3)$.

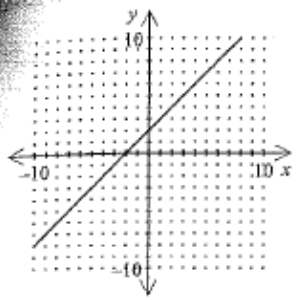
0 40

17.

18

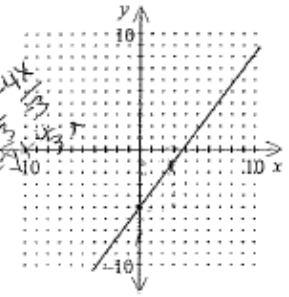
Determine which relation is a function.

Write an equation for the translation of $y = x$ shown in the graph.



$y = x + 2$

22. Write the equation of the line that is 3 units left and 6 units down from the line shown in the graph.



$y = \frac{4}{3}x - 7$

$y = -5 + \frac{4}{3}x$

$y = -5 + \frac{4}{3}(x+3) - 6$

$y = \frac{4}{3}(x+3) - 11$

$y = \frac{4}{3}x + \frac{12}{3} - 11$

23. How does the graph of $y = (x-3)^2 - 2$ compare with the graph of $y = x^2$?

right 3 down 2

24. What are the coordinates of the vertex of the graph of $y = x^2$?

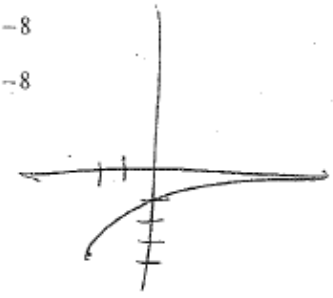
(0,0)

25. Let $f(x) = x^2$. The graph of $f(x)$ is translated down 8 units and right 7 units. Identify the function corresponding to the translation.

[A] $f(x) = (x-7)^2 + 8$ [B] $f(x) = (x-7)^2 - 8$

[C] $f(x) = (x+7)^2 + 8$ [D] $f(x) = (x+7)^2 - 8$

26. Graph the function and find the domain and range: $y = \sqrt{x+2} - 4$



$x \geq -2$

$y \geq -4$

ijan equation for the Uanslation of y = x shown in the graph.

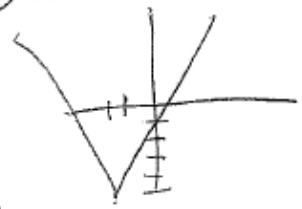
How does the graph of y = (x 3)2 2 compare with the graph of y = x2 ?

Let f(x) : x2. The graph of f (ac) is down» 8 units and right 7 units. Identify the function corresponding t0 the translation.

27. Which of these functions is the reflection of $f(x)=\sqrt{x}$ across the y-axis?

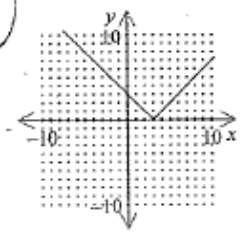
[A] $g(x)=-\sqrt{x}$ [B] $g(x)=\sqrt{x-1}$ [C] $g(x)=\sqrt{-x}$ [D] $g(x)=-\sqrt{x-1}$

28. Graph.
$f(x)=|x+2|-5$

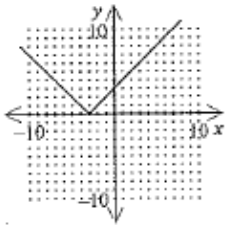


29. Identify the graph of $f(x)=|x-3|$.

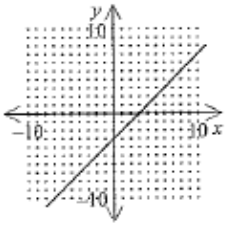
[A]



[B]



[C]



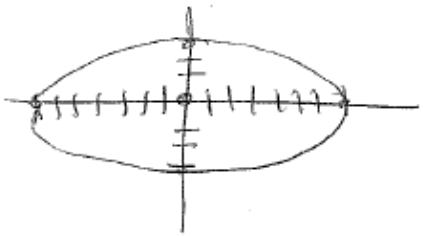
[D] None of these

30. What is the center of the unit circle whose equation is $(x+9)^2+(y+6)^2=1$? $(-9,-6)$

31. Write an equation that translates the graph of $y=\pm\sqrt{1-x^2}$ down 3 units and stretches it horizontally by a factor of 4.

$y=\pm\sqrt{1-\left(\frac{x}{4}\right)^2}-3$

32. Write two functions that you could use to graph the ellipse $\frac{x^2}{49}+\frac{y^2}{9}=1$ on your calculator. Then graph the ellipse.



$y=\pm 3\sqrt{1-\left(\frac{x}{7}\right)^2}$

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ch of these functions is the reflection of f across the y-axis?

[C] y A [D] None of these

31. Write an equation that translates the graph of y I i {I1 — xi down 3 units and étretclms it

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33. Answer each question and show all work clearly on a separate piece of paper.

If $f(x)=\frac{x}{3}+2$, $g(x)=-2x^2$, and $h(x)=(x-2)^2$, find each value.

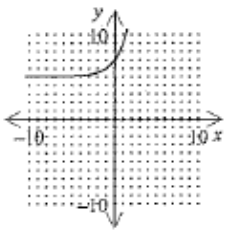
a. $f(g(-2))$ 2|3 b. $h(g(5))$ 2704 c. $g(f(x))$ $\frac{2x^2}{9}-\frac{8x}{3}-8$

34. Evaluate and round your answer to the nearest hundredth.

$(0.82)^t$ for $t=6$ .3

35. Which graph shows $y=2^x-5$?

[A]



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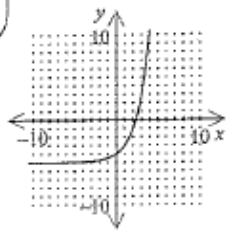
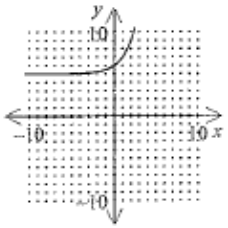
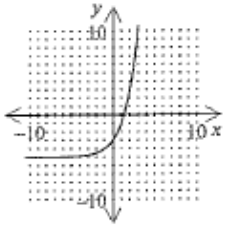


[C]



[D]



36. Which expression is equivalent to $\left(\frac{4^5}{b^2}\right)^2$?

[A] $\frac{4^9}{b^9}$ [B] $\frac{4^7}{b^4}$ [C] $\frac{4^{10}}{b^4}$ [D] $\frac{4^6}{b^{-6}}$

37. Write as a radical expression and evaluate if possible.

$32^{\frac{1}{5}}$ $\sqrt[5]{32}=2$

swer each question and show all work clearly on a separate piece of

paper.

34. Evaluate and round your answer to the nearest hundredth.

37. Write as a radical expression and evaluate if possible.

E

38. Rewrite the equation in logarithmic form and solve. Round the answer to nearest hundre

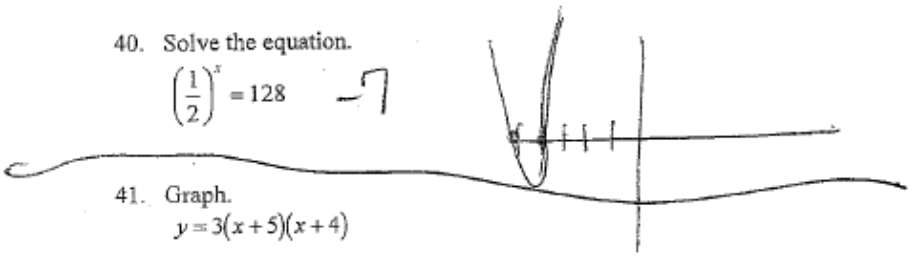
$4.7^x = 21$ $\log_{4.7} 21 = x = 1.97$

39. Evaluate. [A] −1 [B] −3 [C] 5 [D] −2

$\log\frac{1}{10}$

40. Solve the equation.

$\left(\frac{1}{2}\right)^x = 128$ -7



41. Graph.

$y = 3(x+5)(x+4)$

42. Solve each equation. Check your solutions.

$(x+5)(2x-1) = 0$ -5 $.5$

43. Solve.

$y = 4(x-1)^2$ $x = 1$

44. Add or subtract.

$(-4+i)+(1+7i)$ $-3+8i$

~~45.~~ Solve. SKIP $2i$ $-2i$ $\sqrt{5}$ $-\sqrt{5}$

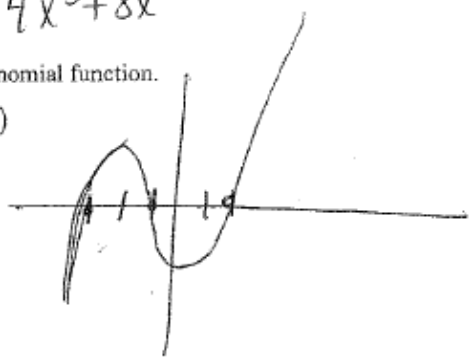
$x^4 - x^2 - 20 = 0$

46. Write the polynomial in general form.

$y = 4x^2(x+2)$ $y = 4x^3 + 8x^2$

47. Sketch the graph of the polynomial function.

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



38.

39.

40.

Rewrite the equation in logarithmic form and solve. Round the answer to nearest hu11dreH

1 1 i Ogle

Solve the equation.

2

46.

47.

Sketch the graph of the polynomial function.

P(x) = - 2)(x + 3)

1

(48) a) $x=-4$ $x=1$

b) $x=0$ $x=7$ $x=1$