Unit 3 CA Name: _____

Show work and check your answers.

Solve for x.

1. $-6 = \frac{b}{18}$

2. $x - 7 = -10$

3. $15 = -15 - 8u$

4. $-18 = \frac{5}{2}r + 12$

5. Four students worked the following equation. Their work is shown below. Identify which <u>one</u> student did the work correctly. $\frac{x}{3} + 4 = 7$

Alice	Bill	Chu	Danielle
$\frac{x}{3} + 4 = 7$	$\frac{x}{3} + 4 = 7$	$\frac{x}{3} + 4 = 7$	$\frac{x}{3} + 4 = 7$
$\frac{x}{3} = 11$	$\frac{x}{3} = 3$	$\frac{x}{3} = 3$	$x + 4 = 21$
$x = 33$	$x = 1$	$x = 9$	$x = 17$

6. Which of the following are correct steps to find the solution of the following equation? $5 + \frac{x}{2} = 9$

A. Multiply both sides by 2 and subtract 5.

B. Multiply both sides by -2 and subtract 5.

C. Subtract 5 from both sides and multiply by 2

D. Subtract 5 from both sides and divide by 2.

7.	$8(7 - y) = -24$	8.	$2x - 4(x - 1) = 10$
9.	$\frac{x+1}{5} = 2$	10.	$7 - (x + 4) = 0$
11.	$22 - 5(6v - 1) = -63$	12.	$-\frac{1}{2}(6x - 4) + 5(x + 2) = 0$
13.	$\frac{2}{3}\left(x^2 - 1\right) = 20$	14.	$\left(\frac{1}{2}x - 3\right)^2 + 11 = 60$
15.	$19 - \sqrt{4x} = 15$	16.	$15 - 4\sqrt{3 - 2x} = 3$

17.	$\frac{-3(4x-7)}{5}+11=17$	18.	$7x + 23 = 3x - 29$
19.	$39 - 12w = 7 - 16w$	20.	$-x - 1 = x - 21$
21.	$8a - 4(-5a - 2) = 12a$	22.	$\frac{1}{2}(12n - 4) = 14 - 10n$
23.	$\frac{2}{3}(6x+3)=4x+2$	24.	$8(h - 1) = 6h + 4 + 2h$

Write an equation and solve for x.

25.	Nine less than one fourth of a number is 6. Find the number.	26.	Sixteen increased by twice a number is −56. Find the number.

27.	The sum of 3x and 14 equals the difference of 20 and 2x.	28.	The product of number x and −6 is equal to the sum of the same number x and 21.
29.	When you multiply a number s by 9 and add 5, the result is the same as the product of the number s and 7.		
30.	Mark is walks at an average rate of 12 miles per hour. What distance will he walk, if he plans to walk for 3 hours? $$d = r \cdot t$$		
31.	The price of a television set on sale is $360. This is two thirds of the regular price. Find the regular price. $____		
32.	The present age of Jacob's father is three times that of Jacob. After 5 years, sum of their ages would be 70 years. Find their present ages.		

Write an equation and solve.

33. What four consecutive integers have a sum of 86. Name them.

Equation:

Answer:

34. The sum of three consecutive odd integers is 339. What are the integers?

Equation:

Answer:

35. Membership to a video game club is $50 a year and $3 per game rented. At the end of the year Harvey had spent $296. How many games had he rented?

Equation:

Answer:

36. The cost of renting a jet ski is $40 per day plus $50 per hour of use. If you want to rent it for 5 hours, how much would the rental cost?

37. Danielle wants to paint a ceramic planter. The total price is the cost of the planter (which was \$9) plus an hourly painting rate of \$6.

a. Write an equation for the cost, C, after h hours.

b. How much money will it be after 2 hours of painting?

c. Determine how many hours Danielle painted if her total bill was \$33?

38. Find the 40th term in the sequence.

$-2.5, -1.8, -1.1, -0.4,\ 0.3, \ldots$

Figure #	Number of Squares		
1		=	
2		=	
3		=	
4		=	
5		=	
t		=	

Equation:

Answer:

39. What figure # in sequence would have 45 squares?

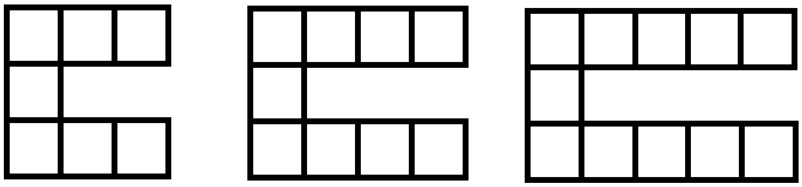

Figure 1 Figure 2 Figure 3

Term			Value
1		=	
2		=	
3		=	
4		=	
5		=	
x		=	

Equation:

Answer:

40. Leann was traveling at 19 miles per hour and Jack was traveling at 11 miles per hour. They were traveling directly away from each other.

When will Leann and Jack be 145 miles apart?

Rate	Time	Distance

Equation:

Answer:

41. Mark travels at 28 kilometers/hour and Kent travels at 46 kilometers/hour. They traveled in the same direction but Mark had a 3 hour head start.

How long will it take for Kent to catch up to Mark?

Rate	Time	Distance

Equation:

Answer:

42. Fran was traveling at 5 centimeters per minute faster then Maria. Start at the same time the two began traveling directly toward each other.

How many minutes will it take for Fran to meet Maria if they are 140 centimeters apart?

Rate	Time	Distance

Equation:

Answer:

43. Cindy travels at 25 kilometers/hour and Greg travels at 45 kilometers/hour. They traveled in the same direction but Cindy had a 2 hour head start.

How long will it take for Greg to catch up to Cindy?

Rate	Time	Distance

Equation:

Answer:

Solve the formula for the indicated variable. *Use the do and undo table to help you.*			
44.	$d = \frac{m}{v}$ for m	45.	$b = 2b + y$ for y
46.	$e = mc^2$ for m	47.	$C = \frac{mv^2}{r}$ for m
48.	$u = x - k$, for x	49.	Solve $h = vt - 16t^2$ for v
50.	Solve for a. $y = \frac{c - ax}{b}$	51.	$A = P(1 + rt)$ for r
52.	$S = 180(n - 2)$ Solve for n.	53.	$v^2 = u^2 + 2as$ for a

54. $D = \frac{a}{2}(2t - 1)$ for a

55. $S = \frac{n}{2}(a + 1)$ for a

56. Solve the formula below for "a."

Acceleration formula

$V = u + at$

time taken

Final Velocity

Initial Velocity

acceleration

A) Solve for t.

B) Given: $u = 15\ \text{ms}^{-1}$ $a = -9.8\ \text{ms}^{-2}$ $v = 0$

Find: t

57. The Celsius and Fahrenheit temperatures are related by the equation:

$F = \frac{9}{5}C + 32$ for C

A) Solve for C.

B) The overnight low was 41˚F. What is this in degrees Celsius?

58.	Solve $S = R - rR \ for \ R$	59.	Solve for X. GC+ AX = BX