SOL HW CH3R

January 20, 2017 10:36 AM

Math 8 Enriched

Ch 3 Algebra Review

Name _____ Date _____

1. Twelve more than a number is −12. Find the number.

$x+12=-12$
$x=-24$

2. −200 is the difference between a number and 500. What is the number?

$x-(-200)=500$
$x+200=500$
$x=300$

3. Three times a number, decreased by 14, is the same as 22 decreased by five times the number. Find the number.

$3x-14=22-5x$
$8x=36$
$x=\frac{36}{8}$
$x=\frac{9}{2}$

4. One number is 9 less than another. When 4 times the larger is subtracted from 12 times the smaller, the difference is 36. Find each number.

9, 72

$12x-4(x+9)=36$
$12x-4x-36=36$
$8x=72$
$x=9$

5. The sum of two numbers is 68. Six times the smaller number is 8 less than half the larger number. What are the numbers?

4 and 64

$x+2(6x+8)=68$
$x+12x+16=68$
$13x=52$
$x=4$

6. Three numbers have the sum 81. The second is twice the first, and the third number is 6 more than the second. Find the three numbers.

15, 30, 36

$x+2x+2x+6=81$
$5x=75$
$x=15$

7. Find four consecutive integers such that the sum of the first and fourth is −35.

$x+x+3=-35$

−19, −18, −17, −16

$2x+3=-35$
$2x=-38$
$x=-19$

8. Find two consecutive odd integers whose sum is 72.

$x+x+2=72$
$2x=70$
$x=35$

35 and 37

9. Find two consecutive even integers such that twice the larger is 14 less than 5 times the smaller.

$x+2=5x-14$
$16=4x$
$x=4$

4 and 6

10. If the sum of three consecutive even integers is decreased by 80, the result is equal to half the middle integer. Find the three even integers.

$x-2+x+x+2-80=\frac{x}{2}$

30, 32, 34

$3x-80=\frac{x}{2}$
$x=6x-160$
$-5x=-160$
$x=32$

11. There are 3 more dimes than nickels in a sack of coins. The value of the coins is \$8.85. How many nickels are there?

$0.05x + 0.1(x+3) = 8.85$

There are 57 nickels

$0.05x + 0.1x + 0.3 = 8.85$

$0.15x = 8.55$

$x = 57$

12. A piggy bank contains 10 times as many pennies as nickels. The total value of the coins is \$1.35. How many coins of each type are there?

$0.05x + 0.1x = 1.35$

$0.15x = 1.35$

$x = 9$

9 nickels, 90 pennies

Solve.

13. $b(25b + 1) = 0$

$b = 0, b = -\frac{1}{25}$

14. $(3m + 5)(3m - 5) = 0$

$m = -\frac{5}{3}, m = \frac{5}{3}$

15. $g(g - 5)(g + 8) = 0$

$g = 0$

$g = 5$

$g = -8$

16. $y - 5y^2 = 0$

$y(1 - 5y) = 0$

$y = 0, y = \frac{1}{5}$

17. $0 = x^2 + 10x + 21$

$0 = (x+7)(x+3)$

$x = -7, x = -3$

18. $0 = y^2 - 12y + 32$

$0 = (y-8)(y-4)$

$y = 8, y = 4$

19. $0 = r^2 - 4r - 96$

$0 = (r-12)(r+8)$

$r = 12, r = -8$

20. $3d^3 + 33d^2 + 72d = 0$

$3d(d^2 + 11d + 24) = 0$

$3d(d+8)(d+3) = 0$

$d = 0, d = -8, d = -3$

21. $d^3 = 25d^2 + 54d$

$0 = d^3 - 25d^2 - 54d$

$0 = d(d^2 - 25d - 54)$

$0 = d(d-27)(d+2)$

$d = 0, d = 27, d = -2$

22. $0 = a^4 - 26a^2 + 25$

$0 = a^4 - 26a^2 + 25$

$0 = (a^2 - 1)(a^2 - 25)$

$0 = (a+1)(a-1)(a-5)(a+5)$

$a = -1, a = 1, a = 5, a = -5$

Solve for the indicated variable.

23. $E = Ir + IR$; for I

$E = I(r+R)$

$I = \frac{E}{r+R}$

24. $S - Sr = r$; for S

$S(1-r) = r$

$S = \frac{r}{1-r}$

25. $C = \frac{10-r}{r}$; for r

$C = \frac{10-r}{r}$

$Cr = 10 - r$

$Cr + r = 10$

$r(C+1) = 10$

$r = \frac{10}{C+1}$

26. $p^2 - 5pw + 4w^2 = 0$; for w

$4w^2 - 5pw + p^2$

$1 \quad -4$

$1 \quad -1$

$(p-4w)(p-w) = 0$

$p = 4w$ $\quad$ $p = w$

$\frac{p}{4} = w$

Solve.

27. $8d + 5 - 3d = 2 + 5d + 3$

$5d + 5 = 2 + 3$

$5d = 0$

$d = 0$

28. $5w + 2 - 8w = 5 - 3w + 1$

$5w + 2 = 5 + 5w + 1$

$2 \neq 6$ ←

No answer

29. $-5(6 - r) = 3(9r - 2)$

$-30 + 5r = 27r - 6$

$-22r = 24$

$r = -\frac{12}{11}$

30. $\frac{3}{5}(25x + 35) = \frac{1}{3}(30 + 45x)$

$15x + 21 = 10 + 15x$

No answer

31. $\frac{3}{10}y = 1 + \frac{1}{3}y$

$\frac{9}{30}y = 1 + \frac{10}{30}y$

$-\frac{1}{30}y = 1$

$y = -30$

32. $0.02(0.5c + 0.3) = 0.03c - 0.07(0.3 - 0.1c)$

33. $5 + 2\left[3(2w - 5) - (-4w)\right] = -3\left[4 - 5(w - 1)\right] + 2w$

$5 + 2[$

34. $(7a-1)(a+5) = 7a(a+5) - 2$

35. $(3x+5)(2x-7) + 2x^2 = (4x+1)(2x-5)$

36. $2y^2 - 9y - 4 = (y-6)(2y+5)$

37. $2p(3p-1) = 6p^2 + 5p - 4$

38. $(w+1)(w-4) = w^2 + 9w + 17$

39. $8 + 3(4n-1) + n^2 + (2-n)(n+1) = 6n + 42$

40. $2(5a - 3a^2) + (3a-1)(2a+3) = 8a + 12$

Factor.

41. $g^2 + 12g + 35$

42. $y^2 + 13y + 30$

43. $k^2 + 10k + 28$

44. $24 + 25x + x^2$

45. $p^6 + 27p^3 - 90$

46. $k^4 + 9k^2 + 8$

47. $n^2 - 15n + 73$

48. $w^2 + 16w - 132$

49. $n^2 - 74n + 144$

50. $w^6 + 16w^3 + 55$

51. $78 - 7w - w^2$

52. $-4p^2 + 25q^2$

53. $196c^2 - 225$

54. $36w^2x^2 - 1$

55. $225x^2 - y^2$

56. $4n^4 - (n-1)^4$

Math 8 Enriched Ch 3 Algebra Review Mr. Young 27/01/2011

Answer List

1.	-24	2.	300	3.	$\frac{9}{2}$
4.	$0, -9$	5.	$4, 64$	6.	$15, 30, 36$
7.	$-19,\ -18,\ -17,\ -16$	8.	35, 37	9.	6, 8
10.	30, 32, 34	11.	57	12.	9 n, 90 p
13.	$0, -\frac{1}{25}$	14.	$\pm\frac{5}{3}$	15.	$0, 5, -8$
16.	$0, \frac{1}{5}$	17.	$-3, -7$	18.	$8, 4$
19.	$12, -8$	20.	$-8, -3, 0$	21.	$27, -2, 0$
22.	$\pm 1, \pm 5$	23.	$\frac{E}{r+R}$	24.	$\frac{r}{1-r}$
25.	$\frac{10}{C+1}$	26.	$p, \frac{p}{4}$	27.	$\mathbb{R}$
28.	Ø	29.	$-\frac{12}{11}$	30.	Ø
31.	-30	32.	1	33.	$-\frac{2}{5}$
34.	-3	35.	$\frac{30}{7}$	36.	13
37.	$\frac{4}{7}$	38.	$-\frac{7}{4}$	39.	5
40.	$\frac{5}{3}$	41.	$(g+7)(g+5)$	42.	$(y+10)(y+3)$
43.	prime	44.	$(24+x)(1+x)$	45.	$(p^3+30)(p^3-3)$
46.	$(k^2+8)(k^2+1)$	47.	prime	48.	$(w+22)(w-6)$
49.	$(n-72)(n-2)$	50.	$(w^3+5)(w^3+11)$	51.	$(13+w)(6-w)$
52.	$(5q-2p)(5q+2p)$	53.	$(14c-15)(14c+15)$	54.	$(6wx-1)(6wx+1)$
55.	$(15x-y)(15x+y)$	56.	$(n^2+2n-1)(3n^2-2n+1)$		

Catalog List

1.	ALG HA 19	2.	ALG HA 45	3.	ALG HB 16
4.	ALG HB 31	5.	ALG HB 47	6.	ALG HB 67
7.	ALG HC 18	8.	ALG HC 36	9.	ALG HC 46
10.	ALG HC 52	11.	ALG HD 4	12.	ALG HD 14
13.	ALG JA 51	14.	ALG JA 72	15.	ALG JA 74
16.	ALG JB 16	17.	ALG JB 51	18.	ALG JB 72
19.	ALG JB 116	20.	ALG JD 35	21.	ALG JD 56
22.	ALG JD 65	23.	ALG JE 2	24.	ALG JE 4
25.	ALG JE 9	26.	ALG JE 36	27.	ALG GF 73
28.	ALG GF 81	29.	ALG GF 100	30.	ALG GF 140
31.	ALG GF 151	32.	ALG GF 199	33.	ALG GG 36
34.	ALG GG 59	35.	ALG GG 73	36.	ALG GG 64
37.	ALG GG 56	38.	ALG GG 51	39.	ALG GG 78
40.	ALG GG 80	41.	ALG ID 11	42.	ALG ID 27
43.	ALG ID 43	44.	ALG ID 91	45.	ALG IF 130
46.	ALG ID 125	47.	ALG II 66	48.	ALG II 87
49.	ALG II 97	50.	ALG II 155	51.	ALG II 45
52.	ALG IJ 66	53.	ALG IJ 63	54.	ALG IJ 111
55.	ALG IJ 78	56.	ALG IJ 181		