Name _____   Date _____

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

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

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

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.

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?

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.

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

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

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

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.

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?

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?

Solve.

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

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

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

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

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

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

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

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

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

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

Solve for the indicated variable.

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

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

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

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

Solve.

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

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

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

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

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

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

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

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.	$9\,\mathrm{n}, 90\,\mathrm{p}$
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.	$\varnothing$	29.	$-\frac{12}{11}$	30.	$\varnothing$
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.	$(n^2+2n-1)(3n^2-2n+1)$		

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