Math 098 Quiz 4 Preparation Ch.4.4 to 4.7 v02
NO BOOK/ NO NOTES/YES CALCUATOR
Winter 2016 Dressler

Name_____

Factor completely.

1) $(x - 1)^2 + 49(x - 1) + 50$ 1) _____

2) $x^2 + 5xy - 14y^2$ 2) _____

3) $x^3 - x^2 - 6x$ 3) _____

Factor completely using the grouping method to factor trinomials. If unfactorable, indicate that the polynomial is prime.

4) $9x^2 - 6xt - 8t^2$ 4) _____

5) $6x^2 + 13xt + 6t^2$ 5) _____

6) $12x^2 + 17xt + 6t^2$ 6) _____

Factor completely. If unfactorable, indicate that the polynomial is prime.

7) $49 - w^2$ 7) _____

8) $16 - w^2$ 8) _____

9) $(x - 7)^2 - 9$ 9) _____

10) $(x - 2)^2 - 64$ 10) _____

11) $s^{10} - t^{14}$ 11) _____

12) $s^{10} - t^{10}$ 12) _____

13) $49b^8 - 12$ 13) _____

14) $9b^4 - 20$ 14) _____

Factor completely.

15) $x^3 - 1000$ 15) _____

16) $375k^3m - 192m^4$ 16) _____

17) $108x^3 + 500$ 17) _____

18) $54x^3 + 250$ 18) _____

19) $16k^3m - 250m^4$ 19) _____

20) $t^3 + 512$ 20) _____

21) $t^3 + 8$ 21) _____

22) $128x^3 + 250$ 22) _____

23) $750x^3 + 162$ 23) _____

24) $a^3b^3 + 64$ 24) _____

25) $a^3b^3 + 125$ 25) _____

26) $64 - t^3$ 26) _____

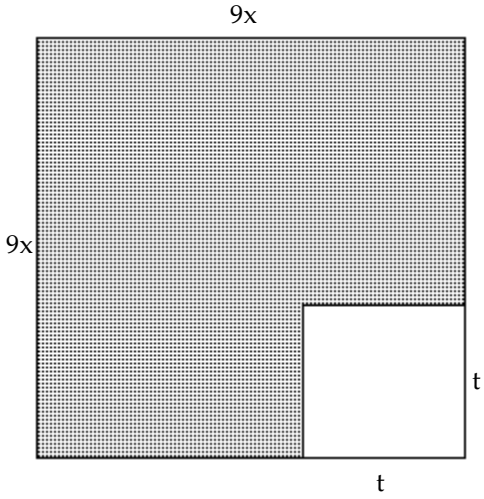
27) $216 - t^3$ 27) _____

28) $x^4 - \frac{x}{125}$ 28) _____

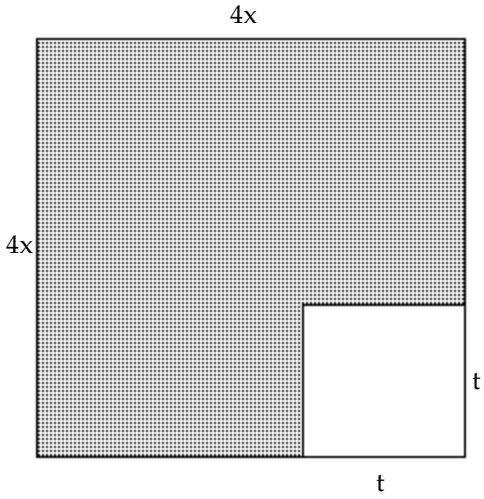
29) $x^4 - \frac{x}{27}$ 29) _____

Solve the problem.

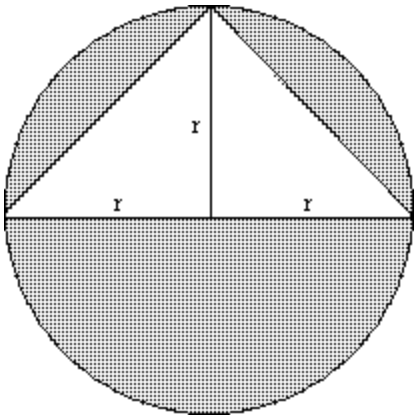
30) Express the shaded area as the product of two binomials. 30) _____



31) Express the shaded area as the product of two binomials. 31) _____



32) A circle with a radius r contains a triangle whose base passes through the center of the circle and whose height is r. Express the shaded area in terms of r and π as a completely factored polynomial. 32) _____



33) A machine produces open boxes using square sheets of plastic. The machine cuts equal–sized squares measuring 2 inches on a side from each corner of the sheet, and then shapes the plastic into an open box by turning up the sides. If each box must have a volume of 242 cubic inches, find the length of one side of the open box. 33) _____

34) A machine produces open boxes using square sheets of plastic. The machine cuts equal–sized squares measuring 4 inches on a side from each corner of the sheet, and then shapes the plastic into an open box by turning up the sides. If each box must have a volume of 1600 cubic inches, find the length of one side of the open box. 34) _____

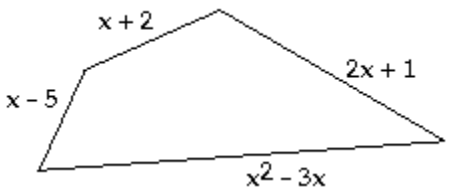
35) A machine produces open boxes using square sheets of plastic. The machine cuts equal–sized squares measuring 2 inches on a side from each corner of the sheet, and then shapes the plastic into an open box by turning up the sides. If each box must have a volume of 242 cubic inches, find the length of one side of the open box. 35) _____

36) A triangular piece of glass is being cut so that the height of the triangle is 4 inches shorter than twice the base. If the area of the triangle is 48 square inches, how long is the height of the triangle? 36) _____

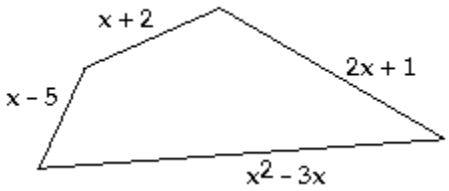
37) A triangular piece of glass is being cut so that the height of the triangle is 4 inches shorter than twice the base. If the area of the triangle is 168 square inches, how long is the height of the triangle? 37) _____

38) A triangular piece of glass is being cut so that the height of the triangle is 4 inches shorter than twice the base. If the area of the triangle is 24 square inches, how long is the height of the triangle? 38) _____

39) The perimeter of the quadrilateral is 108 inches. Find the lengths of the sides. 39) _____



40) The perimeter of the quadrilateral is 70 inches. Find the lengths of the sides. 40) _____



Solve the equation.

41) $x(5x + 18) = 8$ 41) _____

42) $x(3x + 4) = 4$ 42) _____

43) $x(3x + 13) = 10$ 43) _____

Solve.

44) $25t^3 - 64t = 0$ 44) _____

45) $49t^3 - 16t = 0$ 45) _____

46) $9t^3 - 64t = 0$ 46) _____

47) $81t^3 - 16t = 0$ 47) _____

1) Prime
2) $(x - 2y)(x + 7y)$
3) $x(x + 2)(x - 3)$
4) $(3x + 2t)(3x - 4t)$
5) $(2x + 3t)(3x + 2t)$
6) $(4x + 3t)(3x + 2t)$
7) $(7 - w)(7 + w)$
8) $(4 - w)(4 + w)$
9) $(x - 4)(x - 10)$
10) $(x + 6)(x - 10)$
11) $(s^5 + t^7)(s^5 - t^7)$
12) $(s^5 + t^5)(s^5 - t^5)$
13) Prime
14) Prime
15) $(x - 10)(x^2 + 10x + 100)$
16) $3m(5k - 4m)(25k^2 + 20km + 16m^2)$
17) $4(3x + 5)(9x^2 - 15x + 25)$
18) $2(3x + 5)(9x^2 - 15x + 25)$
19) $2m(2k - 5m)(4k^2 + 10km + 25m^2)$
20) $(t + 8)(t^2 - 8t + 64)$
21) $(t + 2)(t^2 - 2t + 4)$
22) $2(4x + 5)(16x^2 - 20x + 25)$
23) $6(5x + 3)(25x^2 - 15x + 9)$
24) $(ab + 4)(a^2b^2 - 4ab + 16)$
25) $(ab + 5)(a^2b^2 - 5ab + 25)$
26) $(4 - t)(16 + 4t + t^2)$
27) $(6 - t)(36 + 6t + t^2)$
28) $x\left(x - \frac{1}{5}\right)\left(x^2 + \frac{1}{5}x + \frac{1}{25}\right)$
29) $x\left(x - \frac{1}{3}\right)\left(x^2 + \frac{1}{3}x + \frac{1}{9}\right)$
30) $(9x + t)(9x - t)$
31) $(4x + t)(4x - t)$
32) $r^2(\pi - 1)$
33) 11 in.
34) 20 in.
35) 11 in.
36) 12 in.
37) 24 in.
38) 8 in.
39) 12 in., 21 in., 70 in., 5 in.
40) 10 in., 17 in., 40 in., 3 in.
41) $\left\{-4, \frac{2}{5}\right\}$
42) $\left\{-2, \frac{2}{3}\right\}$

43) $\left\{-5, \frac{2}{3}\right\}$

44) $-\frac{8}{5}, \frac{8}{5}, 0$

45) $-\frac{4}{7}, \frac{4}{7}, 0$

46) $-\frac{8}{3}, \frac{8}{3}, 0$

47) $-\frac{4}{9}, \frac{4}{9}, 0$