th 2 – Honors
nit 2 – Quadratic Functions
Unit 2 Test Review

Name_____
Date_____ Pd____

➢ Perform the indicated operation:

1. $3(-5x^2+2x+1)+(16x^2+5x)+4(6-x)$
$-15x^2+6x+3+16x^2+5x+24-4x = x^2+7x+27$

2. $(3x^2-5x+1)-(2x^2+6x-4)-(-6x^2-2)$
$3x^2-5x+1-2x^2-6x+4+6x^2+2 = 7x^2-11x+7$

3. $3x^4(4x^4-x^3+2x)$
$12x^8-3x^7+6x^5$

4. $(2x-5)(x+3)$
$2x^2+6x-5x-15 = 2x^2+x-15$

5. $(4x-3y)^2$ $(4x-3y)$
$16x^2-24xy+9y^2$

6. $(x+9)(x-9)$
x^2-81

7. $(2x+3)(4x^2-6x+9)$
$8x^3-12x^2+18x+12x^2-18x+27 = 8x^3+27$

8. $(3x-5)(2x+1)(x-3)$
$6x^2+3x-10x-5 = (6x^2-7x-5)(x-3)$
$6x^3-7x^2-5x-18x^2+21x+15$
$6x^3-25x^2+16x+15$

➢ Factor Completely:

9. $36x^4-24x^3$
$12x^3(3x-2)$

10. $2x^3+5x^2-18x-45$
$x^2(2x+5)-9(2x+5)$ $(x^2-9)(2x+5)$
$(x-3)(x+3)(2x+5)$

11. $25x^2-49$
$(5x-7)(5x+7)$

12. $x^2-4x-12$
$(x-6)(x+2)$

13. $2x^2y-4xy-30y$
$2y(x^2-2x-15)$ $2y(x+3)(x-5)$

14. $3x^2-13x-10$ $(x-5)(3x+2)$
$x^2-13x-30$
$(x-15)(x+2)$

15. $25x^2+64$
Prime

16. $3x^4-3$
$3(x^4-1)$ $3(x^2-1)(x^2+1)$ $3(x-1)(x+1)(x^2+1)$

➢ Solve by Factoring:

17. $(3x+7)(2x-5)=0$
$=-7/3$ $=5/2$

18. $2x^2-5x=12$ $(x-8)(x+3)$ $=4, -3/2$
$x^2-5x-24$ $(x-4)(2x+3)$

19. $x^2+2x-8=0$
$(x+4)(x-2)$ $=-4, 2$

20. $2x+35=x^2$ $(x-7)(x+5)$
$x^2-2x-35$ $x=7, -5$

21. $4x^3-25x=0$
$x(4x^2-25) = x(2x-5)(2x+5)$ $=0, 5/2, -5/2$

22. $4x^2-x=0$
$x(4x-1)$ $=0, 1/4$

➢ Write the equation of the parabola in $x-$ ***intercept form***:

23. $x-$ *intercepts*: $(-3,0)$ & $(-1,0)$ and *vertex* $(-2,-1)$
$-1=a(-2+3)(-2+1)$ $a=1$ $y=1(x+3)(x+1)$
$-1=a(1)(-1)$ $\frac{-1}{-1}=\frac{-1a}{-1}$

24. $x-$ *intercepts*: $(3,0)$ & $(2,0)$ and *a point* $(5,-18)$
$-18=a(5-3)(5-2)$ $\frac{-18}{6}=\frac{6a}{6}$ $y=-3(x-3)(x-2)$
$-18=a(2)(3)$ $-3=a$

➢ Write the equations from #23-24 in ***vertex form***:

25. $y=(x+2)^2-1$

26. use calc: $y=-3(x-2.5)^2+.75$

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➤ Complete the missing information:

27. $y = (x+4)^2 - 4$ $(x^2+8x+16)-4$ $(x^2+8x-12)$

Vertex (-4, -4)

Axis of Symmetry: $x = -4$

x – intercepts: (-6, 0) (-2, 0)

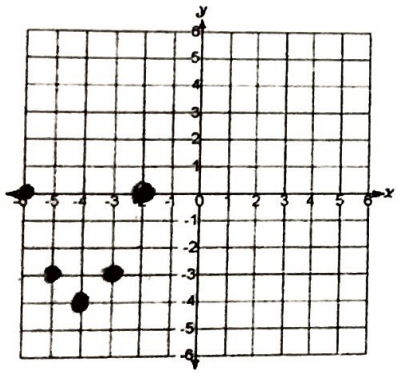
y – intercept: $y = (0+4)^2 - 4 = 12$ (0, 12)

Domain: $(-\infty, \infty)$ or $\mathbb{R}$

Range: $[-4, \infty)$

X – intercept form of the equation:

$y =$ $(x+6)(x+2)$



28. $y = -2(x+3)(x+1)$

Vertex 2nd, Calc, max (-2, 2)

Axis of Symmetry: $x = -2$

x – intercepts: (-3, 0) (-1, 0)

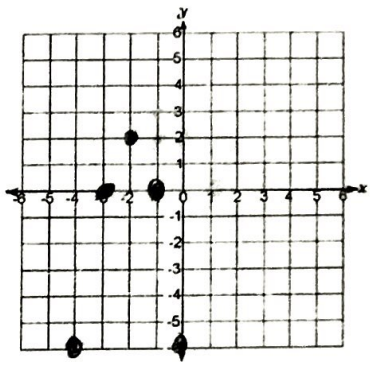
y – intercept: (0, -6)

Domain: $(-\infty, \infty)$ or $\mathbb{R}$

Range: $(-\infty, 2]$

Vertex form of the equation:

$y =$ $-2(x+2)^2 + 2$



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