Non-AP Calculus Ch. P1-P2 Quiz **Review WS #4**

Solve for x by Factoring

1) $10x^3 = 28x^2 + 6x$

Factored Form: _____

Solution: _____

2) $32x = 50x^3$

Factored Form: _____

Solution: _____

3) Identify any intercepts (if any) and test for symmetry $y^2 = x^4 - 9$

x-intercept(s): _____ y-intercept: _____ Symmetry: _____

4) Identify the type(s) of symmetry for: $5x^4y^4 + 3x^7y^3 - 12x = 0$

5) Find the point(s) of intersection (ordered pairs!) of the graphs of the equations:

$x^2 + y^2 = 5$

$3x - y = 5$

Slope m = $\frac{y_2-y_1}{x_2-x_1}$ **slope-intercept form**: y = mx + b **point-slope form**: y-$y_1 = m(x - x_1)$

6) Find an equation of the line (point-slope form) that passes through the points (-1, – 6) and (2, 5)

7) Find an equation of the line (point-slope form) containing the point (-1, 5) that is parallel to the line –2x + 3y = 19

8) Find an equation of the line (point-slope form) containing the point (-5, 1) that is perpendicular to the line 5x – 4y + 13 = 0

9) Write an equation of the line that passes through (– 3, 7) and is perpendicular to the line x = 1

10) Write an equation of the line that passes through (2, – 4) and is parallel to the line y = -2

Non-AP Calculus . Ch. P1-P2 Quiz **Review WS #4**

Key

Solve for x by Factoring

1) $10x^3 = 28x^2 + 6x$

$10x^3 - 28x^2 - 6x = 0$

$2x(5x^2 - 14x - 3) = 0$

-15, 1; 5, -14

$2x(x-3)(5x+1) = 0$

Factored Form: $2x(x-3)(5x+1)$

Solution: $x = 0, 3, -1/5$

2) $32x = 50x^3$

$32x - 50x^3 = 0$

$2x(16 - 25x^2) = 0$

$4\ 4\ \ 5x\ 5x$

$2x(4-5x)(4+5x) = 0$

$4-5x=0$

$4=5x$

Factored Form: $2x(4-5x)(4+5x)$

Solution: $x = 0, 4/5, -4/5$

3) Identify any intercepts (if any) and test for symmetry $y^2 = x^4 - 9$

$0 = x^4 - 9$

$x^2\ x^2\ \ 3\ 3$

$0 = (x^2-3)(x^2+3)$

$y^2 = 0^4 - 9$

$\sqrt{y^2} = \sqrt{-9}$

none

x-intercept(s): $x = \pm\sqrt{3}$ set $y=0$ $(\sqrt{3},0), (-\sqrt{3},0)$

y-intercept: none set $x=0$

Symmetry: x-axis, y-axis

4) Identify the type(s) of symmetry for: $5x^4y^4 + 3x^7y^3 - 12x = 0$

none

5) Find the point(s) of intersection (ordered pairs!) of the graphs of the equations:

$x^2 + y^2 = 5$

$3x - y = 5$

$3x - 5 = y$

$x^2 + (3x-5)^2 = 5$

$x^2 + (3x-5)(3x-5) = 5$

$x^2 + 9x^2 - 15x - 15x + 25 = 5$

$10x^2 - 30x + 20 = 0$

$10(x^2 - 3 + 2) = 0$

$10(x-2)(x-1) = 0$

$x-2=0$ | $x-1=0$

$x=2$ | $x=1$

$y = 3x-5$

$y = 3(2)-5$

$y = 6-5 = 1$

(2, 1)

$y = 3x-5$

$y = 3(1)-5 = -2$

(1, -2)

Slope m = $\frac{y_2-y_1}{x_2-x_1}$ **slope-intercept form**: y = mx + b **point-slope form**: y-y_1 = $m(x-x_1)$

6) Find an equation of the line (point-slope form) that passes through the points (-1, – 6) and (2, 5)

slope: $m=\frac{5--6}{2--1}=\frac{11}{3}$ | point: (2,5) slope: $m=11/3$

$y-5=\frac{11}{3}(x-2)$

or

$y+6=\frac{11}{3}(x+1)$

7) Find an equation of the line (point-slope form) containing the point (-1, 5) that is parallel to the line –2x + 3y = 19

$3y=2x+19$

$y=\frac{2}{3}x+\frac{19}{3}$

$m=2/3$

point: (-1,5)

slope: $m=2/3$

$y-5=\frac{2}{3}(x+1)$

8) Find an equation of the line (point-slope form) containing the point (-5, 1) that is perpendicular to the line 5x – 4y + 13 = 0

$-4y=-5x-13$

$y=\frac{-5x}{-4}-\frac{13}{-4}$

$y=\frac{5}{4}x+\frac{13}{4}$

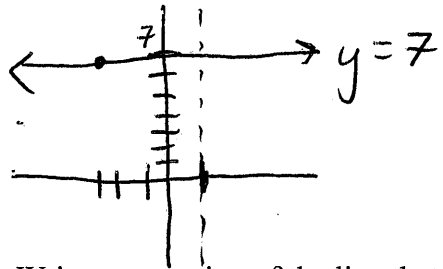
$m_1=5/4$

$m_2=-4/5$

point: (-5,1) slope: $m=-4/5$

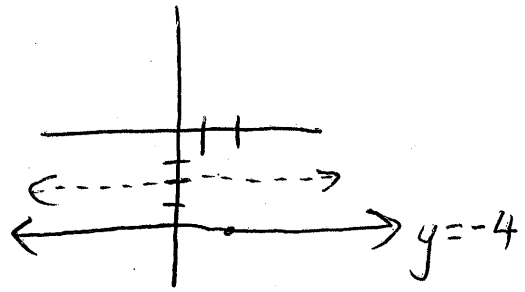
$y-1=-4/5(x+5)$

9) Write an equation of the line that passes through (– 3, 7) and is perpendicular to the line x = 1



$y=7$

10) Write an equation of the line that passes through (2, – 4) and is parallel to the line y = -2



$y=-4$