Non-AP Calculus Ch. P1-P2 Quiz **Review WS #3**

Solve for x by Factoring

1) $6x^2 - 14x = 12$

Factored Form: _____

Solution: _____

2) $4x^2 = 100$

Factored Form: _____

Solution: _____

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

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

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

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

$x^2 + y^2 = 5$

$x - y = 1$

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 (2, – 1) and (-4, 6)

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

8) Find an equation of the line (point-slope form) containing the point (-5, 1) that is parallel to the line $9x - 4y + 21 = 0$

9) Write an equation of the line that passes through (-3, -5) and is parallel to the line $y = 1$

10) Write an equation of the line that passes through (1, 3) and is perpendicular to the line $x = -2$

Non-AP Calculus Ch. P1-P2 Quiz **Review WS #3**

Key

Solve for x by Factoring

1) $6x^2 - 14x = 12$

$6x^2-14x-12=0$

$2(3x^2-7x-6)=0$

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

$3x+2=0 \mid x-3=0$

$x=-2/3 \mid x=3$

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

Solution: $x=-2/3, 3$

2) $4x^2 = 100$

$4x^2-100=0$

$4(x^2-25)=0$

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

$x+5=0 \mid x-5=0$

$x=-5 \mid x=5$

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

Solution: $x=-5, 5$

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

set $y=0$ | $0=x(x+3)(x-3)$ | $x=0, 3, -3$

set $x=0$ | $y^2=0-0$ | $y=0$

$(-y)^2=x^3-9x$ | $y^2=x^3-9x$

x's are odd degrees

x-intercept(s): $(0,0), (3,0), (-3,0)$ y-intercept: $(0,0)$ Symmetry: x-axis symmetry, origin symmetry

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

x have odd degrees

origin symmetry

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

$x^2 + y^2 = 5$

$x - y = 1$

$x-1=y$

$x^2+(x-1)^2=5$

$x^2+(x-1)(x-1)=5$

$x^2+x^2-2x+1=5$

$2x^2-2x-4=0$

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

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

$x-2=0 \mid x+1=0$

$x=2 \mid x=-1$

$*y=x-1 \mid y=x-1$

$y=2-1 \mid y=-1-1$

$y=1 \mid y=-2$

$(2,1) \quad (-1,-2)$

(2, 1) and (-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 (2, – 1) and (-4, 6)

$m = \frac{6 - -1}{-4 - 2} = \frac{7}{-6}$

point: (2, -1)

$y + 1 = -\frac{7}{6}(x - 2)$

or

$y - 6 = -\frac{7}{6}(x + 4)$

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

$3y = -2x + 19$

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

$m_1 = -\frac{2}{3}$

$m_2 = \frac{3}{2}$

point: (-1, 5) slope: $m = 3/2$

$y - y_1 = m(x - x_1)$

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

8) Find an equation of the line (point-slope form) containing the point (-5, 1) that is parallel to the line

$9x - 4y + 21 = 0$

$-4y = -9x - 21$

$4y = 9x + 21$

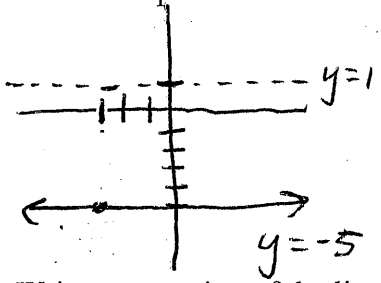
$y = \frac{9}{4}x + \frac{21}{4}$

$m = 9/4$ point: (-5, 1)

$y - y_1 = m(x - x_1)$

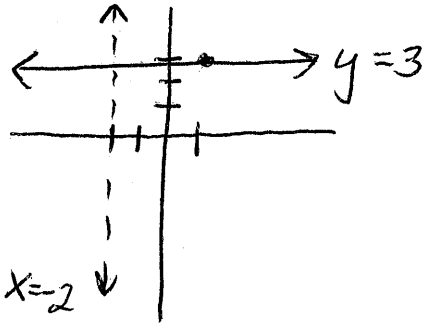
$y - 1 = \frac{9}{4}(x + 5)$

9) Write an equation of the line that passes through (-3, -5) and is parallel to the line y = 1



$y = -5$

10) Write an equation of the line that passes through (1, 3) and is perpendicular to the line x = -2



$y = 3$