

MONTGOMERY COLLEGE  
 Department of Mathematics  
 Rockville Campus

MA 103 KATIRAIE QUIZ #5 Form A SECTIONS (5.2 - 5.4) FALL 2007

NAME Solution

SCORE:      / 20

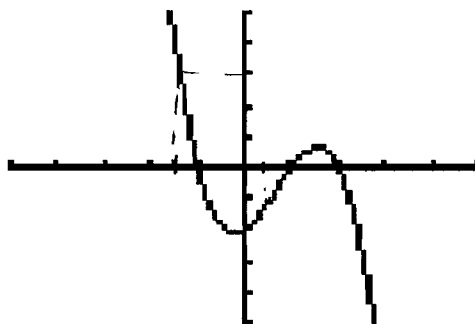
\*\*\* RETAIN ALL GRADED PAPERS FOR YOUR RECORDS \*\*\*

1) Given the following graph of  $f(x)$  find the following:

2pts

a) Estimate the  $x$  value(s) so that  $f(x) = 0$

$x = -1, 1, 2$



b) Estimate  $f(-1.5) = 3$

c) Estimate  $f(0.5) = -1.2$

2) Multiply the following expressions (and simplify)

2pts

a)  $(2x-3)(2-3x)$

$4x - 6x^2 - 6 + 9x$

$= -6x^2 + 13x - 6$

2pts

b)  $(x-3)^2$

$(x-3)(x-3)$

$= x^2 - 6x + 9$

2pts

c)  $(3-2x)(3+2x)$

$9 + 6x - 6x - 4x^2$

$-4x^2 + 9$  OR

$= 9 - 4x^2$

2pts

d)  $(y+3)(y-4)$

$y^2 - 4y + 3y - 12$

$= y^2 - y - 12$

2 pts each

3) Factor the following:

a)  $25x^2y + 10xy - 15x^2y^2$

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

b)  $6x^3 - 4x^2 + 9x - 6$

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

c)  $2x^2 + 7x + 3$

$$2x^2 + 6x + 1x + 3$$
$$= 2x(x + 3) + 1(x + 3)$$

$$= (x + 3)(2x + 1)$$

6  
6  
6 · 1 = 6  
6 + 1 = 7

d)  $6y^2 + 6y - 36$

$$6(y^2 + y - 6)$$
$$= 6(y + 3)(y - 2)$$

4) Solve the following algebraically:

a)  $2x^4 - 4x^3 = 0$

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

$$2x^3 = 0 \quad x - 2 = 0$$

$$x = 0$$

$$x = 2$$

b)  $7x^2 = 9x$

$$7x^2 - 9x = 0$$

$$x(7x - 9) = 0$$

$$x = 0$$

$$7x - 9 = 0$$

$$x = \frac{9}{7}$$

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MA 103 KATIRAIIE QUIZ #5 Form B SECTIONS (5.2 - 5.4) FALL 2007

NAME Solution

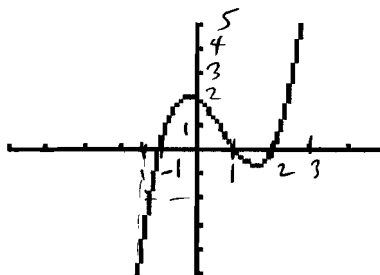
SCORE:      / 20

\*\*\* RETAIN ALL GRADED PAPERS FOR YOUR RECORDS \*\*\*

1) Given the following graph of  $f(x)$  find the following:

a) Estimate the  $x$  value(s) so that  $f(x) = 0$

$$x = -1, 1, 2$$



b) Estimate  $f(-1.5) = -2$

c) Estimate  $f(0.5) = 1$

2) Multiply the following expressions (and simplify)

a)  $(2x+3)(2-3x)$

$$= 4x - 6x^2 + 6 - 9x$$

$$= -6x^2 - 5x + 6$$

b)  $(x+3)^2$

$$(x+3)(x+3) = x^2 + 6x + 9$$

c)  $(3-2x)(3-2x)$

$$9 - 6x - 6x + 4x^2$$

$$= 9 - 12x + 4x^2$$

d)  $(y+5)(y-4) = y^2 - 4y + 5y - 20$

$$= y^2 + 1y - 20$$

3) Factor the following:

a)  $25x^2y + 10xy - 15x^2y^2$

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

b)  $6x^3 - 4x^2 + 9x - 6$

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

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

c)  $2x^2 + 7x + 3$

$$= 2x^2 + 6x + 1x + 3$$

$$= 2x(x + 3) + 1(x + 3)$$

$$= (2x + 1)(x + 3)$$

6  
6 1 = 6  
0 + 0 = 7

d)  $7y^2 + 7y - 42$

$$7(y^2 + y - 6)$$

$$= 7(y + 3)(y - 2)$$

4) Solve the following algebraically:

a)  $2x^4 - 4x^3 = 0$

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

$$2x^3 = 0 \quad x - 2 = 0$$

$$x = 0$$

$$x = 2$$

b)  $7x^2 = 9x$

$$7x^2 - 9x = 0$$

$$x(7x - 9) = 0$$

$$x = 0$$

$$7x - 9 = 0$$

$$x = \frac{9}{7}$$