

# 9.1 Extra Practice

1 a) B, C    b) D    c) A, B, C, D

2 a) i)  $y \leq \frac{2}{7}x - 2$   
 slope =  $\frac{2}{7}$

y-int = -2

ii) solid line

b) i)  $y < \frac{1}{3}x - \frac{5}{3}$   
 slope =  $\frac{1}{3}$

y-int = -2

ii) dotted line

c) i)  $y > -4$   
 slope = 0

y-int = -4

ii) dotted line

d) i)  $y \leq -\frac{5}{2}x + 2$   
 slope =  $-\frac{5}{2}$

y-int = 2

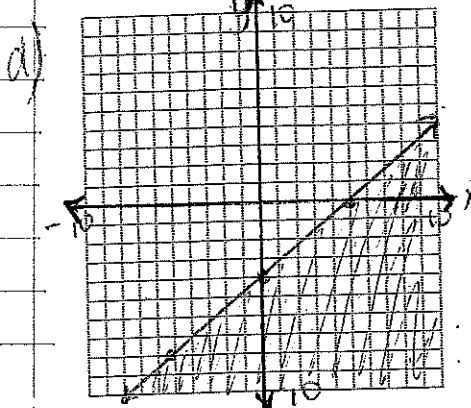
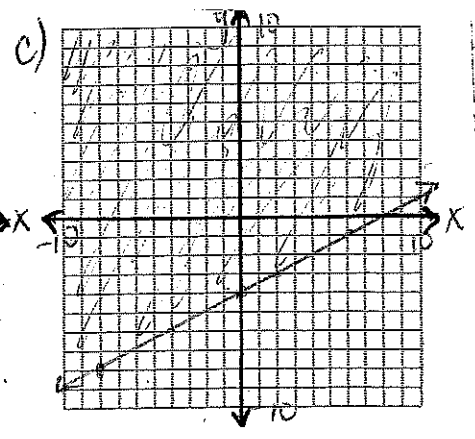
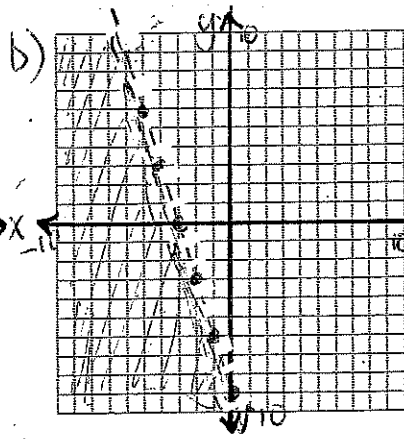
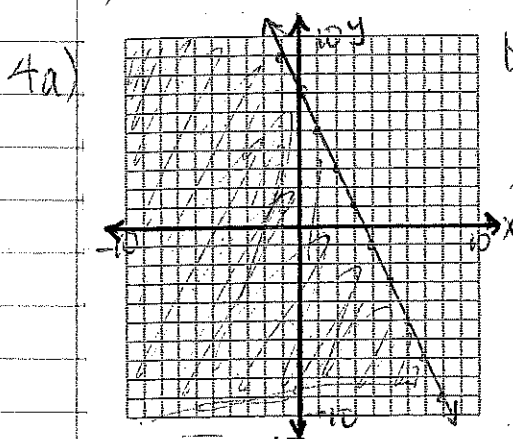
ii) solid line

3 a) i) x-int:  $(-\frac{5}{2}, 0)$   
 y-int:  $(0, 5)$   
 ii) dotted line

b) i) x-int:  $(25, 0)$   
 y-int:  $(0, -5)$   
 ii) solid line

c) i) x-int:  $(-2, 0)$   
 y-int:  $(0, -6)$   
 ii) dotted line

d) i) x-int:  $(-5, 0)$   
 y-int: none  
 ii) dotted line



5 a)  $x = \# \text{ of apples}$      $y = \# \text{ muffins}$

$0.8x + 1.25y \leq 10$

b)  $0 \leq x \leq 12$  and  $0 \leq y \leq 8$

d) You cannot purchase 4.8 apples or muffins

b)  $y \leq \frac{1}{2}x + 2$       c)  $y \geq 1$       d)  $y < -2x - 3$

### 9.2 Extra Practice

1a)  $x = -7, 1$       b)  $x < -7$  or  $x > 1$       c)  $-7 < x < 1$

3a)  $(0)^2 + 3(0) > -5$       b)  $(0-4)(0+3) \leq 7$   
 $0 > -5$        $(-4)(3) \leq 7$   
 Yes       $-12 \leq 7$  Yes

c)  $2(1) - 3 > (1)^2 + 1$       d)  $3(-2)^2 + (-2) - 9 \geq 0$   
 $2 - 3 > 1 + 1$        $3(4) + -2 - 9 \geq 0$   
 $-1 > 2$  No       $12 - 11 \geq 0$  Yes

4a)  $(x-1)(x+5) > 0$       b)  $0 \geq x^2 - 2x + 1 - 4$       c)  $3(x+1)(2x-3) \leq 0$   
 $x < -5$  or  $x > 1$        $x^2 - 2x - 3 \leq 0$        $-1 \leq x \leq \frac{3}{2}$   
 $(x-3)(x+1) \leq 0$   
 $-1 \leq x \leq 3$

5a)  $4x^2 - 17x + 18 > 0$       b)  $-8x^2 + 2x + 15 \geq 0$   
 $4x^2 - 8x - 9x + 18 > 0$        $8x^2 - 2x - 15 \leq 0$   
 $4x(x-2) - 9(x-2) > 0$        $8x^2 - 12x + 10x - 15 \leq 0$   
 $(x-2)(4x-9) > 0$        $4x(2x-3) + 5(2x-3) \leq 0$   
 $(2x-3)(4x+5) \leq 0$

Interval	Factors (x-2)(4x-9)		f(x)
$x < 2$	-	-	+
$2 < x < \frac{9}{4}$	+	-	-
$x > \frac{9}{4}$	+	+	+

$x < 2$  or  $x > \frac{9}{4}$

Interval	Factors (2x-3)(4x+5)		f(x)
$x < -\frac{5}{4}$	-	-	+
$-\frac{5}{4} < x < \frac{3}{2}$	-	+	-
$x > \frac{3}{2}$	+	+	+

$-\frac{5}{4} \leq x \leq \frac{3}{2}$

c)  $x^2 - x + 2 \leq 0$   
 $(x-2)(x+1) \leq 0$

Interval	Factors (x-2)(x+1)	f(x)
$x < -1$	- -	+
$-1 < x < 2$	- +	-
$x > 2$	+ +	+

$-1 \leq x \leq 2$

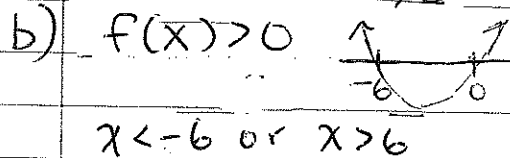
d)  $4x^2 - 12x + 9 \leq 0$   
 $4x^2 - 6x - 6x + 9 \leq 0$   
 $2x(2x-3) - 3(2x-3) \leq 0$   
 $(2x-3)^2 \leq 0$

Interval	Factors (2x-3)(2x-3)	f(x)
$x < 3/2$	- -	+
$x > 3/2$	+ +	+

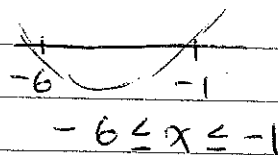
$x = 3/2$

7.  $f(x) = x^2 + 6x = x(x+6)$

a)  $x(x+6) = 0$   
 $x = -6, 0$



c)  $x^2 + 6x \leq -5$   
 $x^2 + 6x + 5 \leq 0$   
 $(x+1)(x+5) \leq 0$



### 9.3 Extra Practice

1a) B, D    b) A, B    c) B, C    d) B, C

2a)  $y \leq (x-3)(x+2)$     b)  $y > x^2 + 8x + 12$   
 $y \leq x^2 - x - 6$

c)  $y \leq -2(x+1)^2 + 5$     d)  $y > 2x^2 - 3x + 4$   
 $y \leq -2(x^2 + 2x + 1) + 5$   
 $y \leq -2x^2 - 4x + 3$

