12.3 Inequalities in Two Variables; Systems

1) Items A and D are solutions to the system of inequalities because these ordered pairs lie within the shaded region.

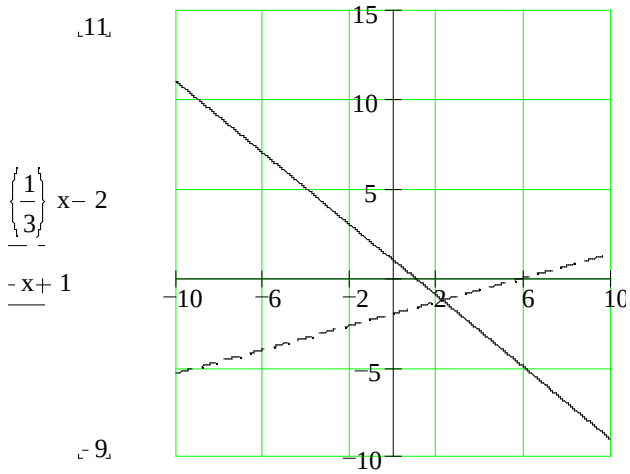
3) Answers will vary. Two possible solutions: (0, 99), (20, 60). Two ordered pairs that are not solutions: (0, 100), (49, 50).

5) A⇔2, B⇔1, C⇔3

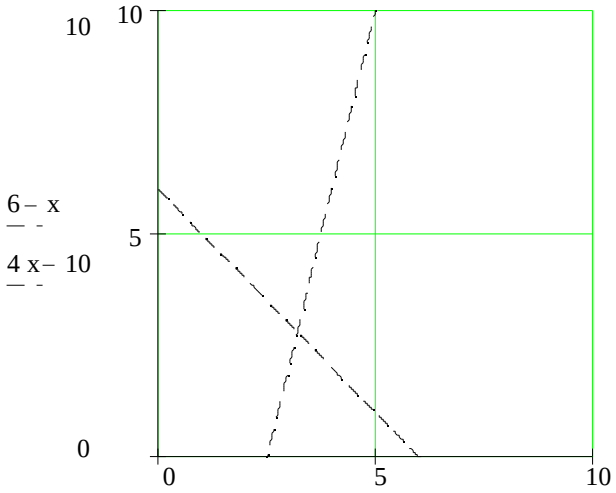
7) $y \geq 2$
$y < -x - 2$
$y \leq 2x + 4$

9) $x \geq -5$
$x < 1$
$y \geq -4$
$y < 4$

11)



13)



15)

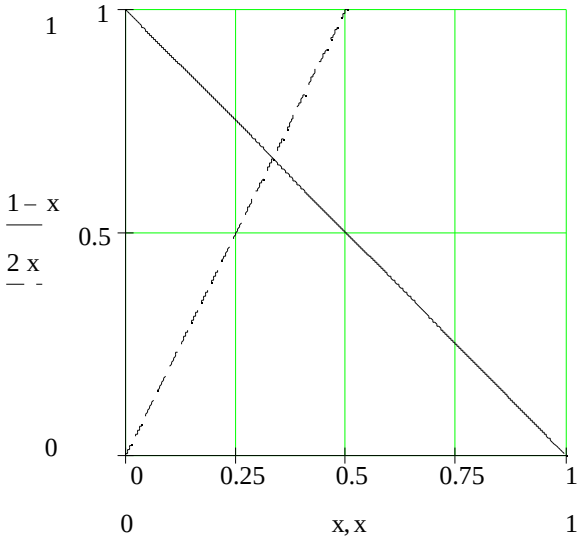
a) $x + y \le 1$

$x \ge \frac{1}{4}$

$y < 2x$

$y \ge 0$

b)



Skill and Review

17) $2x^2 - 72$

$= 2(x^2 - 36)$ ←Factor out common monomial

$= 2(x + 6)(x - 6)$ ←Factor difference of two squares

19) $$\frac{\sqrt{98}}{\sqrt{27}} = \frac{98^{1/2}}{27^{1/2}} = \frac{(7^2 \quad 2)^{1/2}}{(3^2 \quad 3)^{1/2}} = \frac{(7^2)^{1/2} \quad 2^{1/2}}{(3^2)^{1/2} \quad 3^{1/2}} = \frac{7 \quad 2^{1/2}}{3 \quad 3^{1/2}} \quad \frac{3^{1/2}}{3^{1/2}} = \frac{7 \quad (2 \quad 3)^{1/2}}{3 \quad 3^1} = \frac{7\sqrt{6}}{9}$$