4.10 HOMEWORK HANDOUT: INEQUALITIES

PART A

- 1) Determine which points satisfy the given inequality.
 - x + y > -5a)
- (-2,-5) (3,7) (4,-2) (1,-3)
- $x + y \le 2$ b)
- (-8,-2) (3,4) (-5,1) (-7,9)
- x + y < -6c)
- (-2,8) (-3,5) (-2,-10) (-5,-3)
- $x + y \ge 3$ d)
- (1,2) (7,-5) (-3,10) (-5,5)
- 2) Determine which points satisfy the given inequality.
 - x y < 4a)
- (3,7) (-2,-9) (-1,-5) (-2,5)
- $x y \ge -3$ b)
- (5,2) (-5,-2) (5,-2) (-5,2)
- $x y \le -7$ c)
- (9,12) (-5,2) (-1,-5) (-3,5)
- d) x - y > 5
- (-2,6) (-3,5) (-1,-6) (3,-5)
- 3) Determine which points satisfy the given inequality.
 - x > -1a)
- (-3,7) (-1,5) (-5,4) (2,3)
- $y \le -7$ b)
- (4,-9) (-8,3) (-3,-7) (7,-3)
- c) $x \le 4$
- (4,-2) (-5,-3) (7,-3) (5,4)
- y > 4d)
- (-2,5) (4,9) (5,-4) (-3,-2)
- 4) Determine which points satisfy the given inequality.
 - $xy \le 8$ a)
- (3,4) (-2,-4) (2,3) (-5,2)
- xy < -2b)
- (-1,2) (-3,-4) (3,-5) (-1,1)
- xy > 6c)
- (-2,-3) (-5,-3) (4,-2) (5,2)
- $xy \ge -10$ d)
- (-2,5) (-3,5) (-1,-4) (3,-2)

PART B

- 5) Graph the region defined by the inequality.
 - a) x + y > -3
- b) $x - y \ge -2$
- c) x + y < 5
- d) $x - y \le 4$

- 6) Graph the region defined by the inequality.
 - x < -3a)
- b) y > -4
- x > 7c)
- d) $y \le 5$

- 7) Graph the region defined by the inequality.
 - xy < 10a)
- $xy \ge -3$ b)
- c) $xy \le -1$
- d) xy > 4

- 8) Graph the region defined by the inequality.
 - a)

- $y \ge 2x 1$ b) $y < \frac{-3}{4}x + 2$ c) $y > \frac{1}{4}x + 5$ d) $y \le \frac{-5}{6}x 1$

- 9) Graph the region that satisfies both the inequalities.
 - a) $y \le \frac{2}{3}x + 3$
- AND
- $y \ge 5x + 1$

- b) $x + y \ge 3$
- AND
- $x y \le 7$

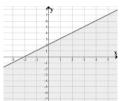
- c) $y \ge 3x + 4$
- AND
- $y \le \frac{-2}{3}x + 5$
- 10) Graph the region defined by the inequality.
 - a) $y \ge x^2$
- b) $y \le x^3$
- c)
- $y \le 2x^2 5$

ANSWERS

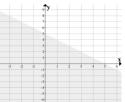
- **1**) a) (3,7) (4,-2) (1,-3) b) (-8-2) (-5,1) c) (-2,-10) (-5,-3) d) (1,2) (7,-5) (-3,10)
- **2)** a) (3,7) (-2,5) b) (5,2) (-5,-2) (5,-2) c) (-5,2) (-3,5) d) (3,-5)
- **3)** a) (-3,7) (-5,4) b) (4,-9) (-3,-7) c) (4,-2) (-5,-3) d) (-2,5) (4,9)
- **4)** a) (-2,-4) (2,3) b) (3,-5) (-1,1) c) (-5,-3) (5,2) d) (-2,5) (-1,-4) (3,-2)
- **5**) a)



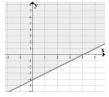
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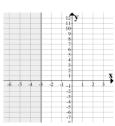
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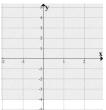
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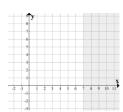
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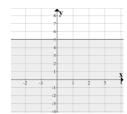
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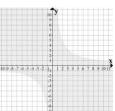
— c)



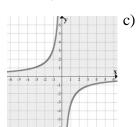
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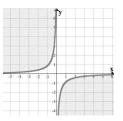


7) a)

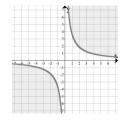


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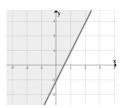




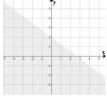
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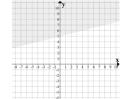
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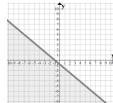
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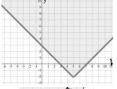
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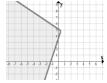
9) a)



b)



c)



10) a)



b)



c)

