

Eighteenth Set of Homework for Math 05

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Please note: You should fully justify your answers.

1 Graphing linear inequalities

1. Sketch the graph of each of the following linear inequalities.

(a) $2x - 3y < 6$

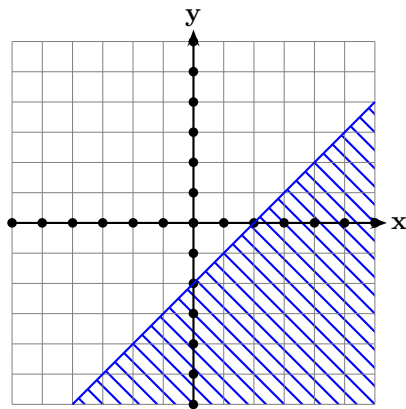
(b) $3x - 5y \leq 12$

(c) $2x + 5y > 10$

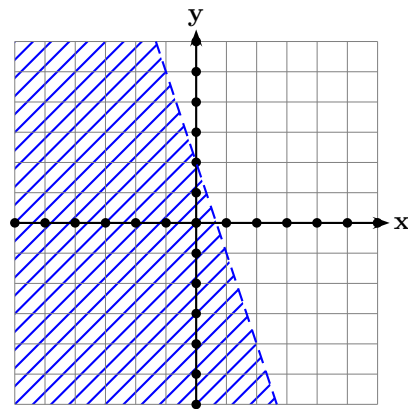
(d) $4x - 3y \geq 12$

(e) $y - 3x \geq 0$

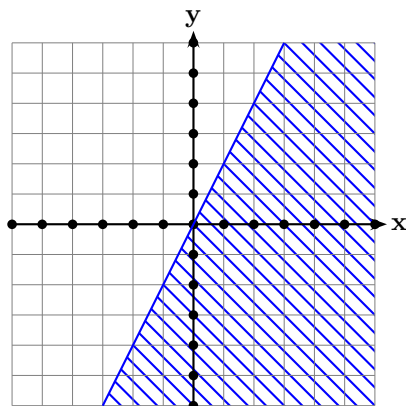
2. Write a linear inequality describing each of the shaded regions below:



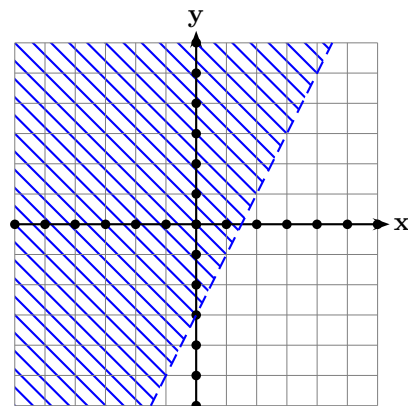
(a)



(b)



(c)



(d)

2 Solving word problems

Answer each of the following problems by writing and solving an appropriate algebraic equation.

1. The sum of two consecutive integers is seventy one. Find the two integers.
2. The sum of two consecutive integers is one more than twice the smaller integer. Find the two integers.
3. The product of two consecutive integers is 156. Find the two integers.
4. The product of two consecutive integers is 29 more than their sum. Find the two integers.
5. The product of two consecutive integers is seven less than three times their sum. Find the two integers.
6. The sum of three consecutive integers is twelve less than the product of the smaller two of the integers. Find the three consecutive integers.
7. The coordinates of a point in the line with equation $4x - 3y = -8$ are consecutive integers. What is the point?
8. The length and the width of a rectangle are consecutive integers. The perimeter of the rectangle is 30 cm. Find the dimensions of the rectangle.
9. The length and the width of a rectangle are consecutive integers. The area of the rectangle is 42 cm^2 . Find the dimensions of the rectangle.
10. The length of a rectangle is three inches less than five times its width. The perimeter of the rectangle is 42 inches. Find the dimensions of the rectangle.
11. The width of a rectangle is five inches more than four times its length. The perimeter of the rectangle is 15 inches. Find the dimensions of the rectangle.
12. One leg of a right triangle is 6 centimeters more than four times the other leg. The area of the triangle is 9 square centimeters. Find the three sides of the triangle.
13. One leg of a right triangle is 4 meters and the hypotenuse is one meter less than twice the other leg. Find the three sides of the triangle.
14. One leg of a right triangle is 3 inches and the hypotenuse is two inches less than three times the other leg. Find the three sides of the triangle.
15. I have twenty coins, all dimes and quarters. The total worth of the coins is \$2.75. How many dimes and how many quarters do I have?
16. I have some coins, all nickels and quarters, twice as many nickels as quarters. All my coins together are worth \$3.85. How many coins of each kind do I have?