

Systems of Equations ... All Methods

Solve the following systems of equations by graphing:

a. $y = 2x + 6$
 $y = -3x - 4$

b. $3x + 2y = 4$
 $2x + 3y = 6$

c. $6x + 3y = 21$
 $2x + y = 2$

d. $4x + 5y = 15$
 $8x + 10y = 30$

e. $x = 2$
 $y = \frac{1}{2}$

f. $y = 0$
 $y = x$

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2. Solve the following system of equations by substitution:

a. $x = y + 8$
 $x + y = 10$

b. $12x + 3y = 21$
 $3x - 12y = 9$

c. $x - 2y = 6$
 $2x - 4y = 12$

d. $21y - 14x = 54$
 $-2x + 3y = 1$

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Solve the following system of equations by elimination

a. $5x - 4y = 21$
 $10x + y = 7$

d. $x + y = 0$
 $y = 2$

b. $2y - 7x = 6$
 $8x - 5y = 4$

e. $-24x + 9y = 3$
 $10y + 8x = 12$

c. $y = 11x - 2$
 $-22x = -2y - 4$

f. $x = y$
 $y = x + 4$

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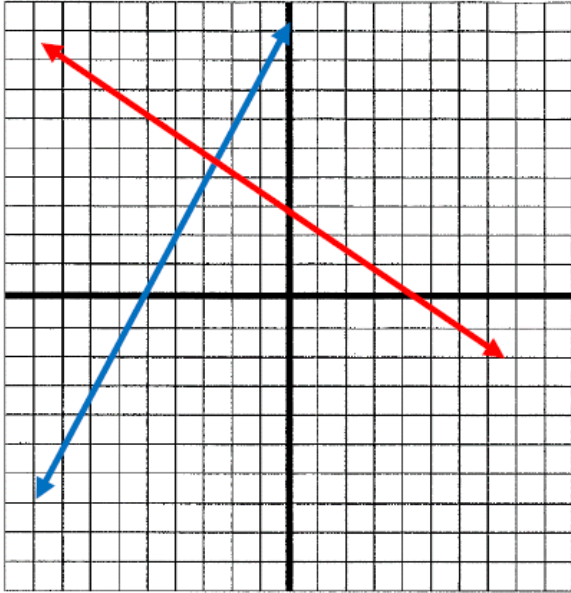
Classify the following lines as consistent, inconsistent, dependent and independent:

a. $2x + 4y = 10$
 $x + 2y = 5$

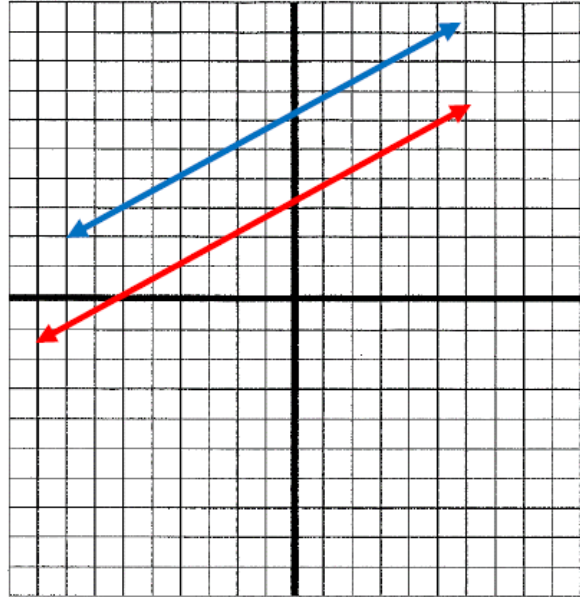
b. $21y - 4x = 14$
 $12x - 3y = 22$

c. $56x - 2y = 12$
 $28x - y = 12$

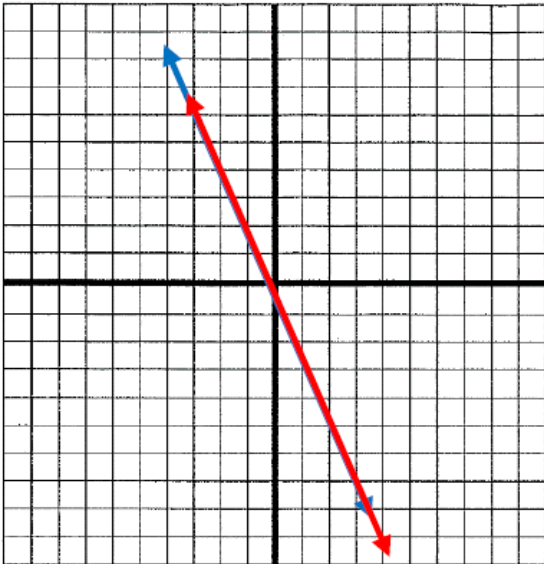
d.



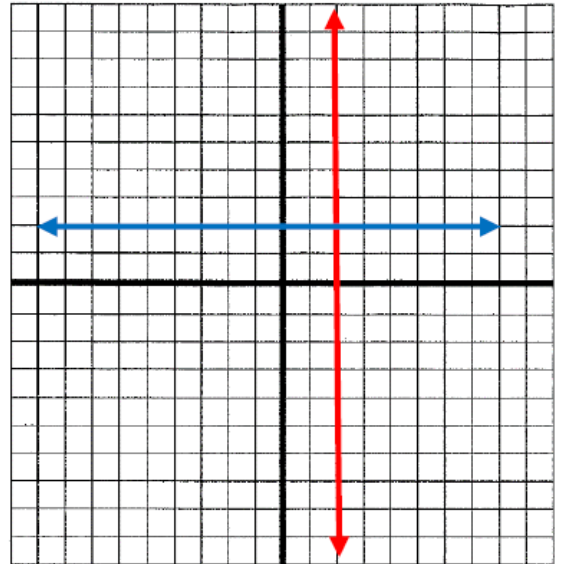
e.



f.



g.



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Classify the following as parallel, perpendicular or neither:

a. $x = y + 11$
 $x - y = 2$

b. $2x + 3y = 24$
 $8x - 12y = 24$

c. $x - 2y = 6$
 $24x + 12y = 60$

d. $12y - 14x = 4$
 $x + 10y = 121$

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Application problems:

- a. In 2016, city A had a population of 52,123 more than city B. Find the population of each city if the total population of the two cities is 150,895,023.
- b. The length of the top of a rectangular desk is 2.5 times its width. Find the dimensions of the desk if the perimeter is 35 ft.
- c. How many liters of a 10% alcohol solution and a 1 % solution should be added to obtain 60% of a 4% solution?
- d. Maria bought two hotdogs and a drink in a ball park for \$21.90 and Lizzy bought 3 hotdogs and 2 drinks for \$35.35 Find the cost of a hotdog and a drink
- e. Two planes leave an airport in opposite directions from each other at the same time. Plane P is 100mph slower than Plane Q. Find the speed of each plane if they are 1000miles apart after 2 hours.