

System of Equations Word Problems

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- 1) Daniel and Wilbur each improved their yards by planting grass sod and shrubs. They bought their supplies from the same store. Daniel spent \$94 on 6 ft² of grass sod and 2 shrubs. Wilbur spent \$34 on 1 ft² of grass sod and 2 shrubs. What is the cost of one ft² of grass sod and the cost of one shrub?

ID Variables: (what do they represent)

x is _____

y is _____

Equation #1: _____

Equation #2: _____

- 2) Dan and Mike each improved their yards by planting rose bushes and geraniums. They bought their supplies from the same store. Dan spent \$54 on 7 rose bushes and 8 geraniums. Mike spent \$44 on 2 rose bushes and 8 geraniums. Find the cost of one rose bush and the cost of one geranium.

ID Variables: (what do they represent)

x is _____

y is _____

Equation #1: _____

Equation #2: _____

- 3) Kayla's school is selling tickets to the annual talent show. On the first day of ticket sales the school sold 5 adult tickets and 6 student tickets for a total of \$71. The school took in \$50 on the second day by selling 2 adult tickets and 6 student tickets. Find the price of an adult ticket and the price of a student ticket.

ID Variables: (what do they represent)

x is _____

y is _____

Equation #1: _____

Equation #2: _____

- 4) A plane traveled 336 miles to Athens and back. The trip there was with the wind. It took 4 hours. The trip back was into the wind. The trip back took 8 hours. Find the speed of the plane in still air and the speed of the wind.

ID Variables: (what do they represent)

x is _____

y is _____

Equation #1: _____

Equation #2: _____

- 5) A boat traveled 243 miles downstream and back. The trip downstream took 9 hours. The trip back took 27 hours. Find the speed of the boat in still water and the speed of the current.

ID Variables: (what do they represent)

x is _____

y is _____

Equation #1: _____

Equation #2: _____

- 6) A plane traveled 648 miles to Bangkok and back. The trip there was with the wind. It took 6 hours. The trip back was into the wind. The trip back took 12 hours. What is the speed of the plane in still air? What is the speed of the wind?

ID Variables: (what do they represent)

x is _____

y is _____

Equation #1: _____

Equation #2: _____

- 7) A plane traveled 1200 miles to Bangkok and back. The trip there was with the wind. It took 8 hours. The trip back was into the wind. The trip back took 12 hours. Find the speed of the plane in still air and the speed of the wind.

ID Variables: (what do they represent)

x is _____

y is _____

Equation #1: _____

Equation #2: _____

- 8) A plane traveled 546 miles to Carson City and back. The trip there was with the wind. It took 6 hours. The trip back was into the wind. The trip back took 14 hours. What is the speed of the plane in still air? What is the speed of the wind?

ID Variables: (what do they represent)

x is _____

y is _____

Equation #1: _____

Equation #2: _____

- 9) A plane traveled 480 miles to San Francisco and back. The trip there was with the wind. It took 4 hours. The trip back was into the wind. The trip back took 6 hours. Find the speed of the plane in still air and the speed of the wind.

ID Variables: (what do they represent)

x is _____

y is _____

Equation #1: _____

Equation #2: _____

- 10) Kathryn and DeShawn each improved their yards by planting rose bushes and geraniums. They bought their supplies from the same store. Kathryn spent \$220 on 15 rose bushes and 5 geraniums. DeShawn spent \$269 on 15 rose bushes and 10 geraniums. Find the cost of one rose bush and the cost of one geranium.

- A) rose bush: \$5.20, geranium: \$10.40 B) rose bush: \$11.40, geranium: \$9.80
C) rose bush: \$10.60, geranium: \$4.80 D) rose bush: \$9.80, geranium: \$11.40

- 11) Cody and Nicole are selling wrapping paper for a school fundraiser. Customers can buy rolls of plain wrapping paper and rolls of holiday wrapping paper. Cody sold 5 rolls of plain wrapping paper and 14 rolls of holiday wrapping paper for a total of \$220.40. Nicole sold 9 rolls of plain wrapping paper and 7 rolls of holiday wrapping paper for a total of \$176.50. What is the cost each of one roll of plain wrapping paper and one roll of holiday wrapping paper?

- A) roll of plain wrapping paper: \$6.30, roll of holiday wrapping paper: \$12
B) roll of plain wrapping paper: \$6.30, roll of holiday wrapping paper: \$18.60
C) roll of plain wrapping paper: \$10.20, roll of holiday wrapping paper: \$12.10
D) roll of plain wrapping paper: \$7.60, roll of holiday wrapping paper: \$14.10

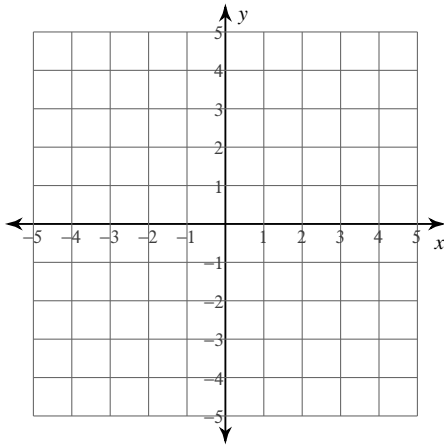
- 12) Shanice's school is selling tickets to a choral performance. On the first day of ticket sales the school sold 14 senior citizen tickets and 1 student ticket for a total of \$91.70. The school took in \$312.20 on the second day by selling 14 senior citizen tickets and 16 student tickets. Find the price of a senior citizen ticket and the price of a student ticket.

- A) senior citizen ticket: \$2.40, student ticket: \$16.90
B) senior citizen ticket: \$14.70, student ticket: \$5.50
C) senior citizen ticket: \$6.60, student ticket: \$11.30
D) senior citizen ticket: \$5.50, student ticket: \$14.70

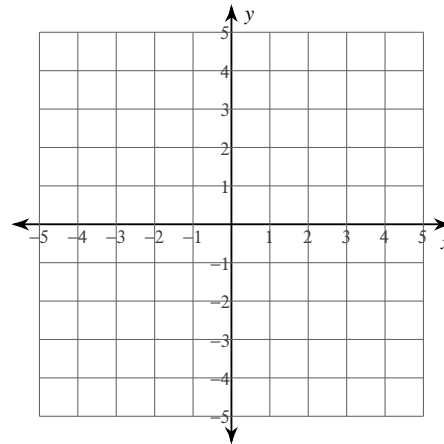
- 13) Trevon's school is selling tickets to a play. On the first day of ticket sales the school sold 5 senior citizen tickets and 6 child tickets for a total of \$116.50. The school took in \$172.50 on the second day by selling 5 senior citizen tickets and 14 child tickets. What is the price each of one senior citizen ticket and one child ticket?
- A) senior citizen ticket: \$13.60, child ticket: \$6.20 B) senior citizen ticket: \$14.90, child ticket: \$7
 C) senior citizen ticket: \$7, child ticket: \$14.90 D) senior citizen ticket: \$10.90, child ticket: \$9.80
- 14) Aliyah and Eugene each improved their yards by planting daylilies and shrubs. They bought their supplies from the same store. Aliyah spent \$163.00 on 15 daylilies and 10 shrubs. Eugene spent \$114.20 on 15 daylilies and 2 shrubs. Find the cost of one daylily and the cost of one shrub.
- A) daylily: \$10.90, shrub: \$4.80 B) daylily: \$10.70, shrub: \$5.60
 C) daylily: \$2.80, shrub: \$9.40 D) daylily: \$6.80, shrub: \$6.10

Sketch the solution to each system of inequalities.

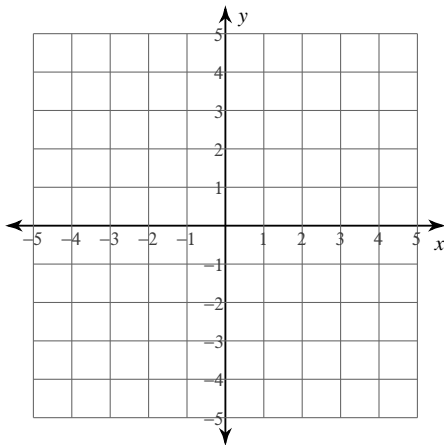
15) $y > \frac{1}{3}x - 2$
 $y > 2x + 3$



16) $y < 2x + 3$
 $y > -4x - 3$



17) $5x + 2y \geq 4$
 $x + 2y < -4$



18) $x - y < -2$
 $x - y < 2$

