

Algebra 1 6.5

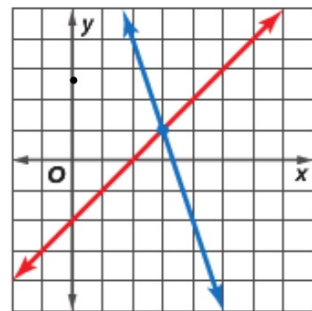
Solve systems of equations

Determine the best method to solve a system

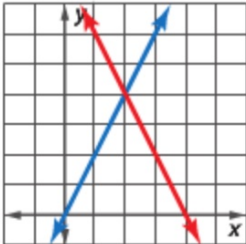
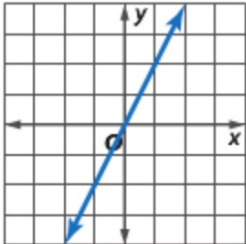
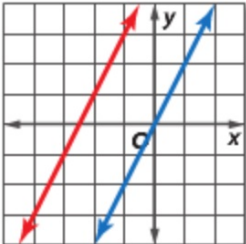
Apply systems of equations

- ↳ solve by graphing
- solve by substitution }
 solve by elimination }
whiteboards

$$y = -3x + 10$$
$$y = x - 2$$



Concept Summary Possible Solutions

Number of Solutions	exactly one	infinite	no solution
Terminology	consistent and independent	consistent and dependent	inconsistent
Graph			

Whiteboards:

1. Determine the best method (substitution or elimination) to solve the system.
2. Explain your choice. " *We chose substitution because...*"
3. Solve the system.

10. $y = -2x - 3$
 $x + y = 9$

7. $2x + 6y = -8$
 $x - 3y = 8$

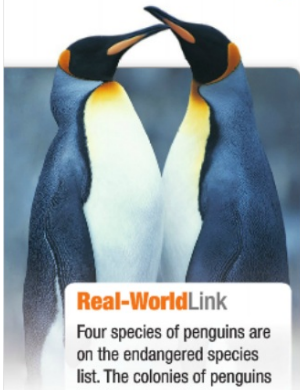
$(-2, -2)$

9. $5x + 8y = 1$
 $-2x + 8y = -6$

13. **DVDs** Manuela has a total of 40 DVDs of movies and television shows. The number of movies is 4 less than 3 times the number of television shows. Write and solve a system of equations to find the numbers of movies and television shows that she has on DVD.



 **Real-World Example 2** Apply Systems of Linear Equations



Real-WorldLink

Four species of penguins are on the endangered species list. The colonies of penguins that live closest to human inhabitants are the most at risk for extinction.

Source: PBS

PENGUINS ~~Of the 17 species of penguins in the world, the largest species is the emperor penguin.~~ One of the smallest is the Galapagos penguin. The total height of the ^{both} penguins is 169 centimeters. The emperor penguin is 22 centimeters more than twice the height of the Galapagos penguin. Find the height of each penguin.

