

Solve each system by elimination.

1) $-11x + 9y = 32$
 $5x - 13y = 30$

- A) No solution
 C) $(-5, -12)$

2) $5x - 9y = -20$
 $9x + 6y = -36$

- A) $(-4, 0)$
 C) $(10, -10)$

Solve each system by substitution.

3) $-5x + 7y = 7$
 $y = 3x + 1$

- A) $(0, -9)$
 C) $(0, 1)$

4) $2x - 4y = -12$
 $y = -7x - 27$

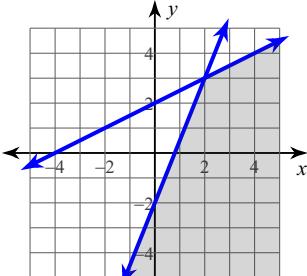
- A) $(-4, -1)$
 C) $(-4, 1)$

- 5) The school that Lisa goes to is selling tickets to a choral performance. On the first day of ticket sales the school sold 12 adult tickets and 6 child tickets for a total of \$126. The school took in \$186 on the second day by selling 2 adult tickets and 12 child tickets. Find the price of an adult ticket and the price of a child ticket.
 A) adult ticket: \$1, child ticket: \$17
 C) adult ticket: \$15, child ticket: \$3
- B) adult ticket: \$1, child ticket: \$11
 D) adult ticket: \$3, child ticket: \$15
- 6) Imani's school is selling tickets to the annual dance competition. On the first day of ticket sales the school sold 10 adult tickets and 7 child tickets for a total of \$238. The school took in \$224 on the second day by selling 2 adult tickets and 14 child tickets. Find the price of an adult ticket and the price of a child ticket.
 A) adult ticket: \$11, child ticket: \$19
 C) adult ticket: \$16, child ticket: \$15
- B) adult ticket: \$14, child ticket: \$14
 D) adult ticket: \$16, child ticket: \$21

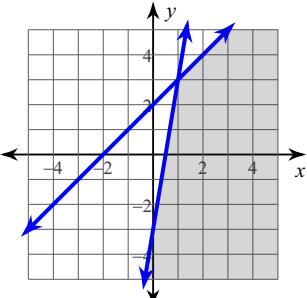
Sketch the solution to each system of inequalities.

7) $5x - 2y \geq 4$
 $x - 2y \geq -4$

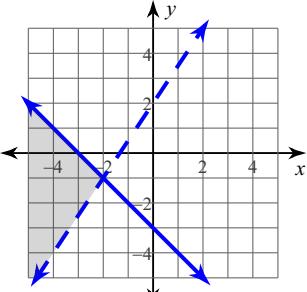
A)



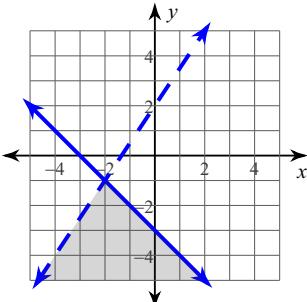
B)



C)

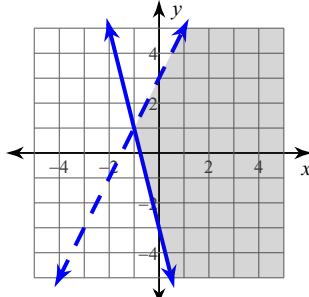


D)

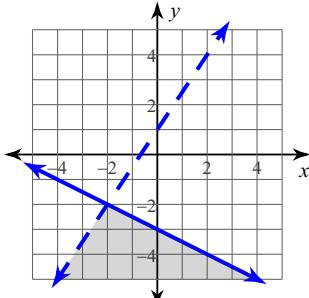


8) $4x + y > -3$
 $2x - y < -3$

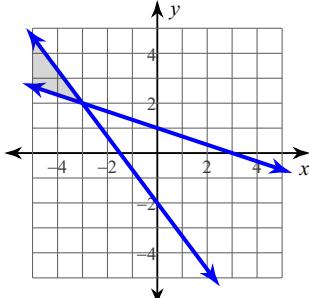
A)



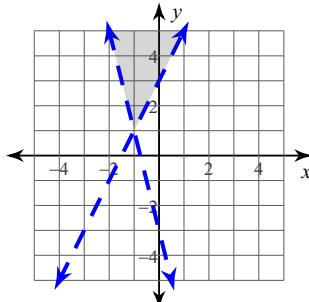
B)



C)



D)



Simplify. Your answer should contain only positive exponents.

9) $\frac{(m^3 n^{-2} \cdot m^4 n^{-1})^4}{2mn^4}$

- A) $\frac{m^{27}}{2n^{16}}$ B) $m^6 n^6$
 C) $\frac{m^3}{4n^7}$ D) $\frac{m^8}{2n^4}$

10) $\left(\frac{2x^4 y^2}{y^2 x^{-3} \cdot x^2} \right)^0$

- A) x^{24} B) $\frac{2}{y^2 x^7}$
 C) $\frac{1}{y^{10}}$ D) 1

Simplify. Write each answer in scientific notation.

11) $(4.21 \times 10^2)(3.5 \times 10^{-6})$

- A) 1.474×10^{-3}
- B) 14.74×10^3
- C) 14.74×10^{-3}
- D) 1.474×10^3

12) $(9.73 \times 10^{-5})(6.02 \times 10^3)$

- A) 5.857×10^2
- B) 5.857×10^1
- C) 5.857×10^{-1}
- D) 5.857×10^{-2}

Simplify.

13) $\sqrt{675m^7n^6}$

- A) $36mn^3\sqrt{n}$
- B) $42m^3n\sqrt{m}$
- C) $15m^3n^3\sqrt{3m}$
- D) $9m^3n$

14) $\sqrt{588x^4y^7}$

- A) $12x\sqrt{15y}$
- B) $20x^2y^2\sqrt{3}$
- C) $12y^2x^3\sqrt{10x}$
- D) $14x^2y^3\sqrt{3y}$

15) $7\sqrt{1500} - 6\sqrt{2160}$

- A) $-74\sqrt{15}$
- B) $-2\sqrt{15}$
- C) $-146\sqrt{15}$
- D) $-218\sqrt{15}$

16) $4\sqrt{21} + 7\sqrt{189}$

- A) $25\sqrt{21}$
- B) $50\sqrt{21}$
- C) $46\sqrt{21}$
- D) $71\sqrt{21}$

17) A metal alloy weighing 2 oz. and containing 10% iron is melted and mixed with 3 oz. of a different alloy which contains 40% iron. What percent of the resulting alloy is iron?

- A) 22%
- B) 44%
- C) 28%
- D) 50%

18) 6 oz of Sarawong's special coffee blend was made by combining 4 oz of brand X coffee which costs \$22/oz with 2 oz of brand Y coffee which costs \$7/oz. Find the cost per oz of the mixture.

- A) \$8.50/oz
- B) \$19.04/oz
- C) \$27.88/oz
- D) \$17/oz

19) Gabriella left the White House and drove toward the train station at an average speed of 55 km/h. Some time later Jessica left driving in the opposite direction with an average speed of 50 km/h. After Gabriella had driven for two hours they were 160 km apart. Find the number of hours Jessica drove.

- A) 1 hour
- B) 2 hours
- C) 3 hours
- D) 4 hours

20) Ryan left Kali's house and drove toward the mountains at an average speed of 30 mph. Paul left one hour later and drove in the opposite direction with an average speed of 70 mph. Find the number of hours Paul needs to drive before they are 230 mi. apart.

- A) 4 hours
- B) 5 hours
- C) 1 hour
- D) 2 hours