1. The television retailed for $375. What was the purchase price of the television if it had been marked up 25% of the purchase price?

2. A sailboat can travel 60 miles upstream in the same time it takes to travel 100 miles downstream. If the speed of the boat in still water is 20 miles per hour, what is the speed of the current?

3. Find three consecutive integers such that twice the product of the first and second exceeds the square of the third by 4.

4. Graph on a number line: $-|x| - 2 > -5$; $D = \{\text{Integers}\}$

5. Find the number that is $\frac{3}{4}$ of the way from $2\frac{1}{3}$ to $4\frac{1}{6}$.

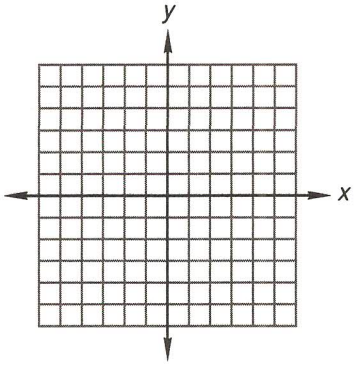
6. Use substitution to solve: $\begin{cases} 2x + 3y = 9 \\ 5x - 2y = -25 \end{cases}$

7. Solve: $\begin{cases} x^2 + y^2 = 36 \\ 2x^2 - y^2 = -9 \end{cases}$

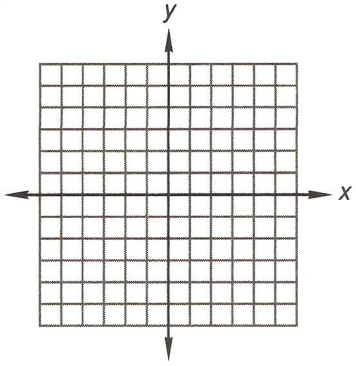
8. Solve: $\begin{cases} 2x - y - z = -5 \\ -2x + 2y - z = 5 \\ x + 3y + z = 6 \end{cases}$

9. Find $gh(-4)$ if $g(x) = x + 4$; $D = \{\text{Reals}\}$, and $h(x) = x^2 - 6$; $D = \{\text{Integers}\}$.

10. Graph: $\begin{cases} y < 2 \\ 5x + 3y \geq 12 \end{cases}$



11. Complete the square as an aid in graphing:
$y = -2x^2 + 8x - 6$



12. Graph on a number line: $x + 4 \leq 2$ or $x - 4 \not\leq -1$; $D = \{\text{Reals}\}$

13. Write $-3R - 7U$ in polar form.

14. Find m: $\frac{c}{a} + \frac{d}{m + x} = ac$

15. Simplify: $\dfrac{cx}{1 - \dfrac{cx}{c - \dfrac{x}{c}}}$

Simplify:

16. $\dfrac{m^{x/3} n^{3x}}{m^{2x} n^{3x/4}}$

17. $\dfrac{4 - 3\sqrt{3}}{2\sqrt{3} - 4}$

18. $\sqrt[4]{a^7 c}\,\sqrt[3]{ac^2}$

19. $\dfrac{3i - 5}{-i^3 + 3i^2}$

20. $4i^7 - \sqrt{-5}\sqrt{-5} + \sqrt{7}\sqrt{-7} - \sqrt{-16}$