

- Evaluate  $12 \div 2 \cdot 3 - 3(-7) =$   
A) 39                      B) -3                      C) 23                      D) -19
- Evaluate the following expression:  $4(3 - 7) \div 2 + 8 =$   
A) -1.6                      B) 0                      C) 10.5                      D) undefined
- Evaluate:  $\frac{5}{8} - \frac{2}{3} + \frac{1}{6} \left(-\frac{1}{2}\right) =$   
A)  $\frac{1}{24}$                       B)  $\frac{25}{24}$                       C)  $-\frac{1}{8}$                       D)  $-\frac{2}{7}$
- Evaluate the expression  $\frac{|x - 6|}{6 - x}$  when  $x = -3$ .  
A) 3                      B) -1                      C) -3                      D) 1
- Simplify the expression  $3\sqrt{20} - 4\sqrt{45} + 2\sqrt{245} =$   
A)  $8\sqrt{5}$                       B)  $-2\sqrt{5}$                       C)  $32\sqrt{5}$                       D)  $-20\sqrt{5}$
- Multiply:  $(-8x^2y)(-3xy^4)$   
A)  $24x^3y^5$                       B)  $-11x^2y^5$                       C)  $-24x^2y^4$                       D)  $11x^3y^3$
- Simplify:  $\frac{5x^5y^4z}{30x^3yz^2}$   
A)  $\frac{6x^2y^3}{z}$                       B)  $\frac{x^2y^3}{6z}$                       C)  $\frac{x^2y^3z}{6}$                       D)  $6x^2y^3z$
- Simplify:  $8t - (-6t + 2)$   
A)  $2t - 2$                       B)  $14t - 2$                       C)  $14t + 2$                       D)  $48t^2 + 16t$
- Subtract:  $(4a^4 - 5a^2 + 2a + 5) - (3a^3 - 3a^2 + 2a - 3)$   
A)  $a^4 - 8a^2 + 4a + 2$                       B)  $4a^4 - 2a^2 + 4a + 8$                       C)  $4a^4 - 3a^3 - 2a^2 + 8$                       D)  $a^4 - 2a^2 + 8$
- Find the indicated product and simplify by combining like terms:  $(7m + 3n)(7m - 3n)$   
A)  $49m^2 - 21mn - 9n^2$                       B)  $49m^2 - 9n^2$                       C)  $49m^2 - 42mn - 9n^2$                       D)  $7m^2 - 3n^2$
- Perform the operation:  $(5x - 2)^2 =$   
A)  $25x^2 - 20x + 4$                       B)  $25x^2 - 4$                       C)  $20x^2 - 50x + 4$                       D)  $25x^2 + 20x + 4$
- Multiply and simplify by combining like terms:  $(a + 5)(a^2 - 5a + 25) =$   
A)  $a^3 - 25a^2 - 25a + 125$                       B)  $a^3 + 125$                       C)  $a^3 - 5a^2 - 25a + 125$                       D)  $a^3 - 125$
- Simplify:  $(25m^2 - 9) \left(\frac{5m + 3}{5m - 3}\right) =$   
A)  $(5m + 3)^2$                       B) 1                      C)  $5m - 3$                       D)  $5(5m + 3)$
- Factor completely  $x^2 - 4x - 12$ .  
A)  $(x + 6)(x - 2)$                       B)  $(x - 8)(x + 4)$                       C)  $(x - 2)(x - 6)$                       D)  $(x - 6)(x + 2)$
- Solve the equation  $x^3 = 24x^2 + 217x$   
A)  $\{-7, 0, 7\}$                       B)  $\{-31, 31\}$                       C)  $\{-7, 0, 31\}$                       D)  $\{0\}$

16. Suppose that  $a$ ,  $b$  and  $x$  are non-zero real numbers, and  $\frac{1}{x} = \frac{1}{a} - \frac{1}{b}$ . Solve this formula for  $x$ .

A)  $x = \frac{a+b}{a-b}$       B)  $x = \frac{ab}{-b-a}$       C)  $x = \frac{ab}{a-b}$       D)  $x = a\frac{b}{b-a}$

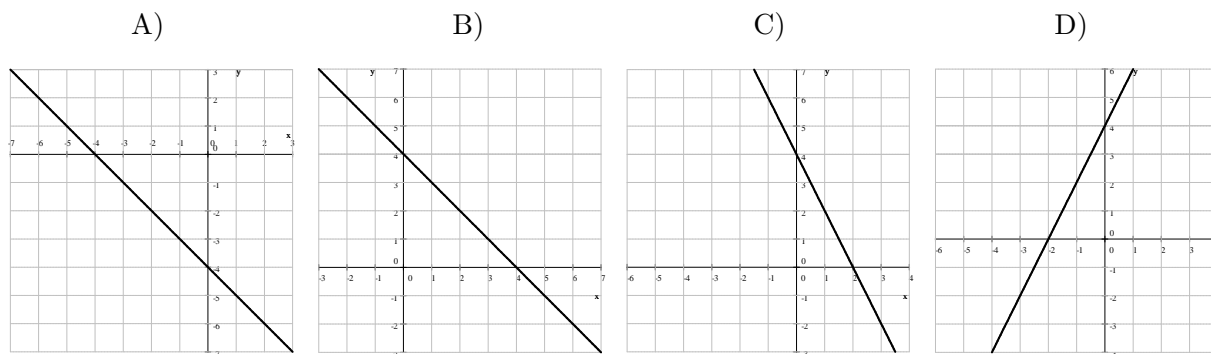
17. Simplify the expression  $\frac{x^2 - 30x - 675}{x^2 - 6x - 1755}$

A)  $\frac{5x - 675}{x - 1755}$       B)  $\frac{x - 75}{x + 351}$       C)  $\frac{x + 15}{x + 39}$       D)  $\frac{x + 15}{x - 5}$

18. Perform the operation and simplify.  $\frac{x^2 - 5x + 78}{18x + x^2 - 208} - \frac{x}{x + 26}$

A)  $\frac{8}{x + 26}$       B)  $\frac{-2x}{x - 26}$       C)  $\frac{x}{x - 8}$       D)  $\frac{3}{x - 8}$

19. Which of the following is the graph of  $y = 2x + 4$ ?



20. Find the equation that belongs to the graph shown on the picture below.

A)  $y = x^2 - 2x + 8$       C)  $y = 6x - x^2 - 8$   
 B)  $y = 6x + x^2 + 8$       D)  $y = 2x + x^2 - 8$

