

Chapters 3/6/9 EOC Review**Multiple Choice**

Identify the choice that best completes the statement or answers the question.

Solve the equation. Then check your solution.

- _____ 1. $-\frac{4}{5}w + \frac{1}{4} = \frac{1}{5} + \frac{1}{3}w$
- a. $-\frac{27}{68}$ c. $\frac{3}{28}$
b. $\frac{3}{68}$ d. $-\frac{3}{68}$
- _____ 2. $4 - \frac{3}{5}(3a + 4) = 7$
- a. $-7.\bar{4}$ c. 3
b. -6 d. -3

Solve the equation or formula for the variable specified.

- _____ 3. $3qr + 9t = 7u$ for r
- a. $r = \frac{7u + 9t}{3q}$ c. $r = \frac{7u - 9t}{3q}$
b. $r = 3q(7u - 9t)$ d. $r = \frac{7u - 9t}{q}$

The Nut House sells peanuts for \$6.75 per pound and cashews for \$9.50 per pound. On Saturday, they sold 32 pounds more peanuts than cashews. The total sales for both types of nuts was \$1,012.25. Let p represent the number of pounds of peanuts sold.

- _____ 4. How many pounds of peanuts were sold?
- a. 49 pounds c. 81 pounds
b. 43.6 pounds d. 82.25 pounds
- _____ 5. How many pounds of cashews were sold?
- a. 49 pounds c. 81 pounds
b. 43.6 pounds d. 82.25 pounds

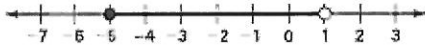
Two airplanes leave Denver, one traveling east at 700 miles per hour and one traveling west at 750 miles per hour. Let t represent the time since their departure.

- _____ 6. In how many hours will the airplanes be 3625 miles apart?
- a. 72.5 hours c. 3 hours
b. 2.5 hours d. 1.25 hours

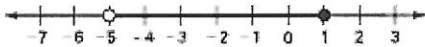
Solve. Graph your solution.

7. $x + 3 \leq 4$ and $-2x < 10$

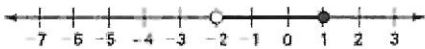
a. $-5 \leq x < 1$



b. $-5 < x \leq 1$



c. $-2 < x \leq 1$



d. $-2 \leq x < 1$

Solve the equation. If there is no solution, write *no solution*.

8. $2|n| - 12 = 16$

a. $n = 14$ or $n = -14$

b. $n = 26$ or $n = -30$

c. no solution

d. $n = 14$

9. $\frac{|j|}{5} + 1 = -4$

a. no solution

b. $j = 15$ or -15

c. $j = -25$

d. $j = -15$

10. $-2|h - 7| = -28$

a. no solution

b. $h = 21$

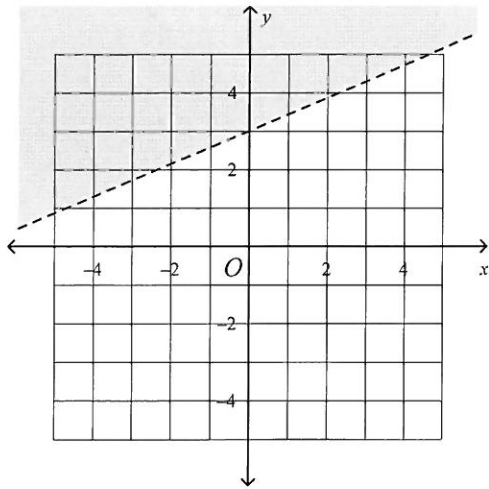
c. $h = -7, h = 21$

d. $h = 7, h = -21$

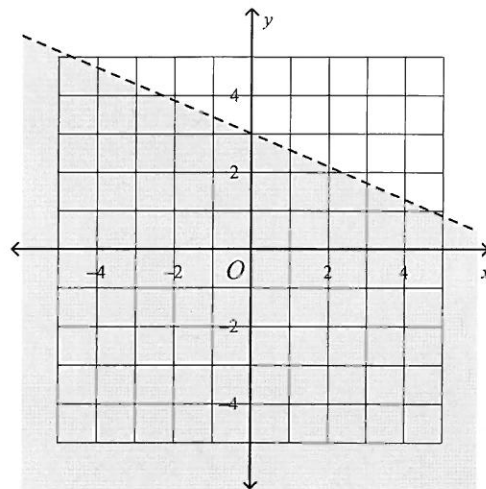
Graph the inequality.

11. $3x - 7y < -21$

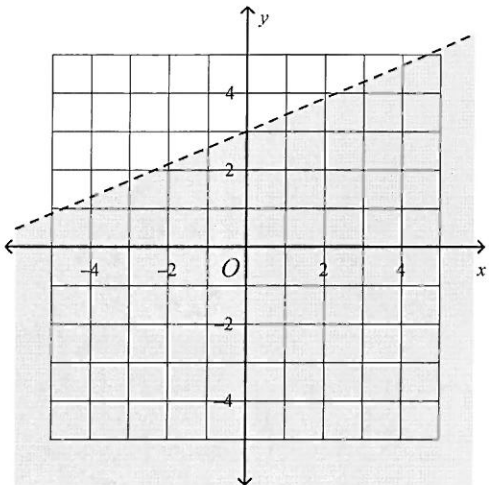
a.



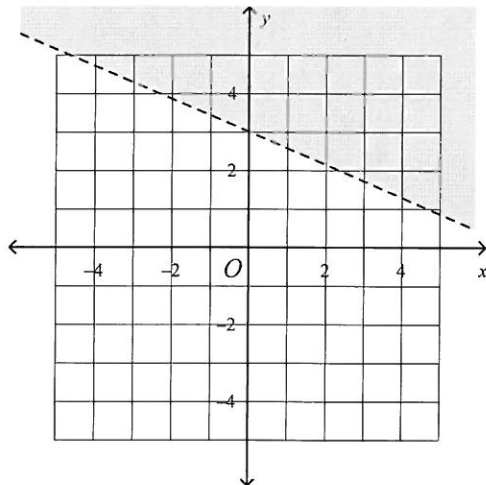
c.



b.



d.



Simplify the expression.

12. $(5q^5 + 4) - (2q^3 + 9) + (6q^5 - q^3)$

a. $11q^5 - 3q^3 - 5$

c. $11q^3 + 3q^5 + 5$

b. $-3q^5 + 11q^3 - 5$

d. $11q^5 + 3q^3 + 5$

- _____ 13. During the years 1992 through 1996, the average number of green grapes, g , sold at a farmer's market can be modeled by $g = -0.14t^2 + 1.4t + 46.62$. The average number of red grapes, r , sold by the farmer's market can be modeled by $r = 0.005t^2 - 0.698t + 75.06$. Determine the model representing the total number of grapes, n , sold from 1992 through 1996.
- $n = 0.135t^4 + 2.098t^2 + 121.68$
 - $n = -0.135t^2 + 0.702t + 121.68$
 - $n = -0.135t^4 + 0.702t^2 + 121.68$
 - $n = 0.135t^2 + 2.098t + 121.68$

Find the product.

_____ 14. $(6y^2 + 3y + 2)(y - 7)$

- | | |
|------------------------------|------------------------------|
| a. $6y^3 - 39y^2 - 19y - 14$ | c. $6y^3 - 39y^2 - 21y - 14$ |
| b. $6y^3 - 45y^2 - 19y + 14$ | d. $6y^3 - 45y^2 - 21y + 14$ |

- _____ 15. A rectangular garden, with length four times its width, is to be expanded so that both sides are increased by 3 yards.

Let x represent the original width of the garden. Write an expression that models the area of the expanded garden.

- | | |
|--------------------|---------------------|
| a. $5x + 6$ | c. $4x^2 + 9$ |
| b. $4x^2 + 6x + 9$ | d. $4x^2 + 15x + 9$ |

Solve the equation.

_____ 16. $16g^2 + 40g + 25 = 0$

- | | |
|-----------------------|-----------------------|
| a. $g = -\frac{4}{5}$ | c. $g = -\frac{5}{4}$ |
| b. $g = \frac{4}{5}$ | d. $g = \frac{5}{4}$ |

Find the product.

_____ 17. $(4m^2 - 5)(4m^2 + 5)$

- | | |
|-----------------|-----------------|
| a. $16m^3 - 25$ | c. $16m^4 + 25$ |
| b. $16m^2 - 25$ | d. $16m^4 - 25$ |

Factor the expression.

_____ 18. $36y^2 - 84y - 147$

- | | |
|------------------------|-------------------------|
| a. $(2y + 7)(6y - 7)$ | c. $(2y - 7)(18y + 21)$ |
| b. $3(2y - 7)(6y + 7)$ | d. $3(2y + 7)(6y + 7)$ |

19. A van travels 220 miles on 10 gallons of gas. Write and solve a proportion to find how many gallons the van needs to travel 550 miles.

a. $\frac{220}{10} = \frac{550}{g}$; 31 gallons of gas

c. $\frac{10}{220} = \frac{550}{g}$; 115 gallons of gas

b. $\frac{10}{220} = \frac{550}{g}$; 121 gallons of gas

d. $\frac{220}{10} = \frac{550}{g}$; 25 gallons of gas

Solve the proportion. If necessary, round to the nearest hundredth.

20. $\frac{13 - b}{6} = \frac{2 - 0.5b}{4}$

a. 32

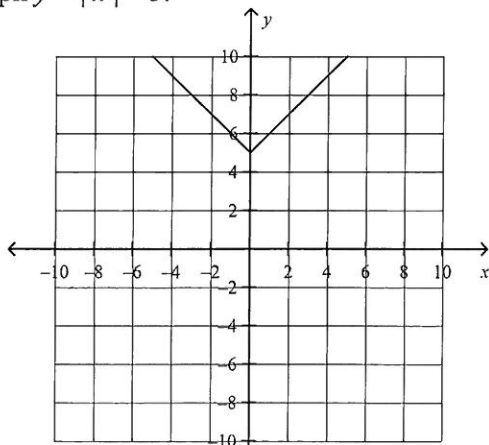
b. 40

c. 64

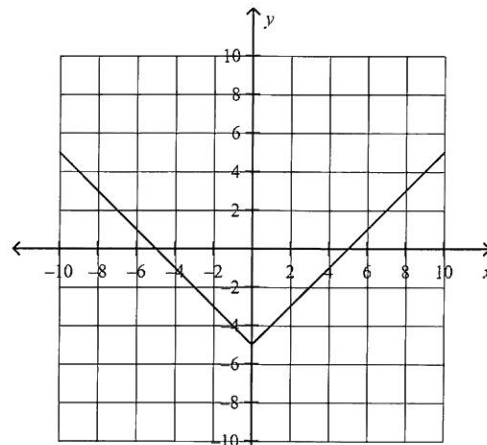
d. 72

21. Graph $y = |x| - 5$.

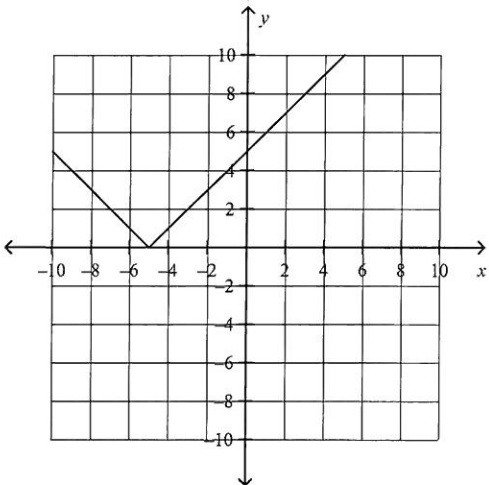
a.



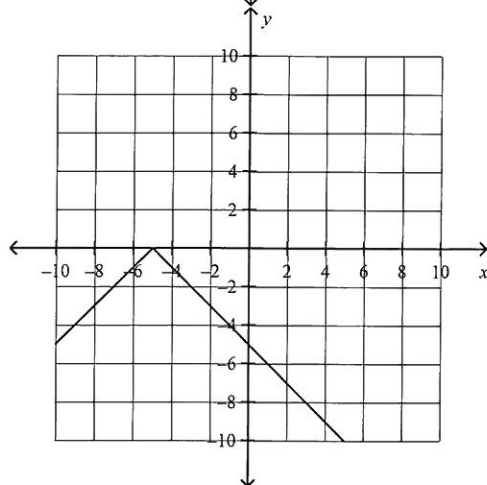
c.



b.



d.



Solve the equation.

_____ 22. $4x(-x-3) = 2(-2x^2-2) - 2$

a. $\frac{1}{2}$

c. $\frac{2}{3}$

b. $\frac{4}{3}$

d. $\frac{3}{4}$

_____ 23. $12x^2 - 14x + 4 = 0$

a. $\left\{\frac{2}{3}, \frac{1}{2}\right\}$

c. $\{-6, -8\}$

b. $\left\{2, \frac{6}{2}\right\}$

d. $\{6, 8\}$

Find the product.

_____ 24. $-2s^2t^4(-6s^3t^5 - 6st^4 - 4t)$

a. $12s^6t^{20} + 12s^2t^{16} + 8s^2t^4$

c. $12s^5t^9 + 12s^3t^8 + 8t^5$

b. $12s^5t^9 + 12s^3t^8 + 8s^2t^5$

d. $-12s^5t^9 - 12s^3t^8 - 8s^2t^5$

Factor the polynomial.

25. $45m^4 + 18m^3 - 20m^2n^2 - 8mn^2$

Short Answer

26. A rectangle with an area of 24 square units has length $x + 1$ and width $4x - 6$. Find the value of x .

Essay

27. A chemist needs 300 liters of a 40% acid solution. He has one 90% acid solution and one 15% acid solution that he plans to mix to obtain the required solution.

a. Complete the table to represent the problem.

	Liters of Solution	Liters of Acid
15% Alloy		
90% Alloy	x	
40% Alloy		

b. Write an equation to represent the problem.

c. How much of each solution should be mixed to obtain the required solution? Show your work.