

Algebra 2 - Chapters 6 & 7 Practice Test

- Simplify: $(x^4 + 15x^3 - 77x^2 + 13x - 36) \div (x - 4)$
 - $x^3 - 23x^2 - 75x - 5$
 - $x^3 + 19x^2 - x + 9$
 - $x^3 - x^2 + 9x + 19$
 - $x^3 + 15x^2 - 23x - 5$
- Expand using the Binomial Theorem: $(s - 5v)^5$
 - $s^5 - 25s^4v + 250s^3v^2 - 1250s^2v^3 + 3125sv^4 - 3125v^5$
 - $s^5 + 125s^4v - 1250s^3v^2 + 6250s^2v^3 - 15625sv^4 + 15625v^5$
 - $s^5 - 25s^4 + 250s^3 - 1250s^2 + 3125s - 3125$
 - $s^5 - 5s^4v + 10s^3v^2 - 10s^2v^3 + 5sv^4 - v^5$
- Let $f(x) = 4x + 3$ and $g(x) = -6x - 5$. Find $f(x) + g(x)$.
 - $-2x - 2$
 - $10x + 8$
 - $-2x + 8$
 - $10x - 2$
- $5!$
 - 720
 - 15
 - 24
 - 120
- Factor: $2x^2 + 15x + 28$
 - $(x + 7)(2x + 4)$
 - $(2x + 7)(x - 4)$
 - $(2x + 4)(x - 7)$
 - $(2x + 7)(x + 4)$
- Divide $3x^3 - 3x^2 - 4x + 3$ by $x + 3$.
 - $3x^2 + 6x - 40, R 99$
 - $3x^2 - 12x + 32, R -93$
 - $3x^2 - 12x + 32$
 - $3x^2 + 6x - 40$
- Zach wrote the formula $w(w - 1)(5w + 4)$ for the volume of a rectangular prism he is designing, with width w , which is always has a positive value greater than 1. Find the product.
 - $5w^3 - w^2 - 4w$
 - $5w^4 - w^3 - 4w^2$
 - $5w^5 - w^4 - 4w^3$
 - $20w^2$
- Write $4x^3 + 8x^2 - 96x$ in factored form.
 - $4x(x - 4)(x + 6)$
 - $4x(x + 6)(x + 4)$
 - $6x(x + 4)(x - 4)$
 - $-4x(x + 6)(x + 4)$
- What is the fifth term of the expansion of $(3x + 2)^8$?
 - $72,576x^4$
 - $3,360x^4$
 - $420x^4$
 - $90,720x^4$

10. What is the inverse of $y = 2x - 3$?

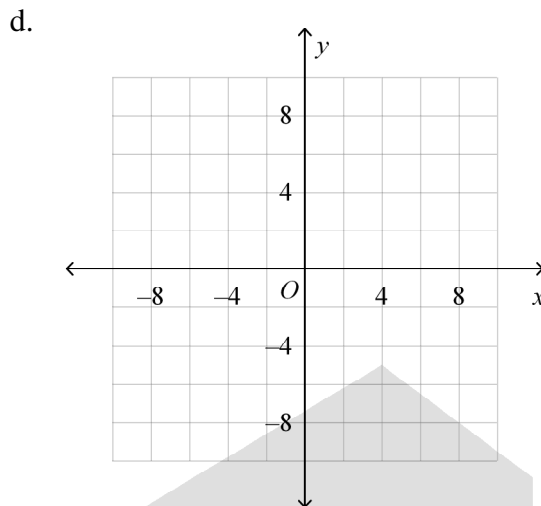
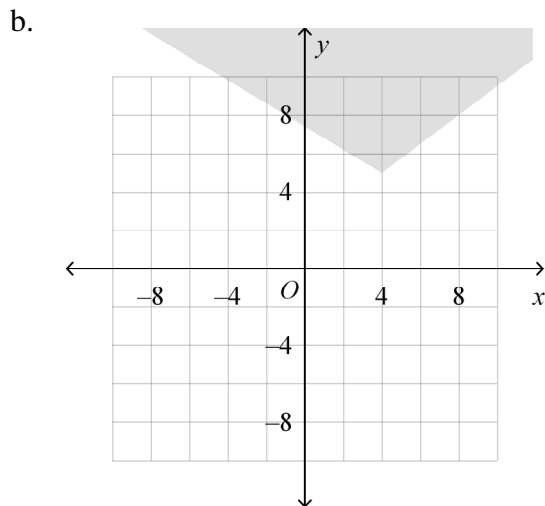
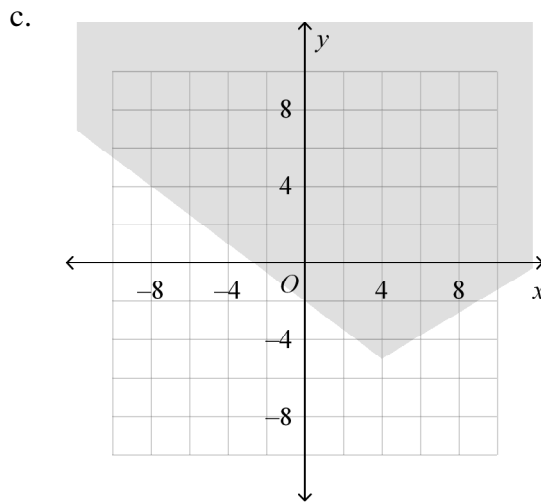
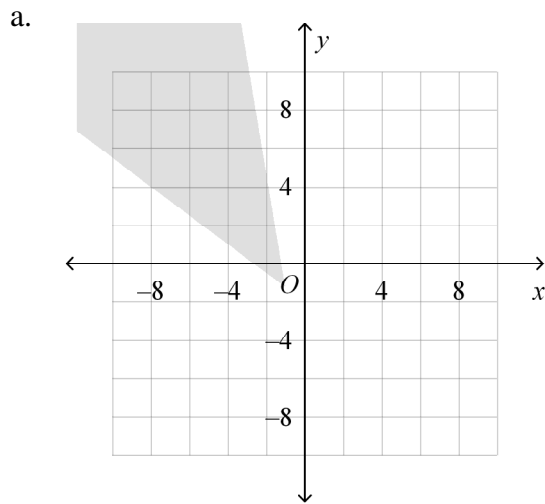
a. $y = \frac{1}{2}x - \frac{3}{2}$

b. $x = 2y - 3$

c. $y = \frac{1}{2}x + \frac{3}{2}$

d. $y = -2x - 3$

11. Graph: $\begin{cases} 6x + 8y \geq -16 \\ -3x + 5y \geq -37 \end{cases}$



12. Which polynomial represents $(x - 5)(x + 4)(x^2 - 1)$?

a. $x^4 + 20$

b. $x^4 - x^3 - 22x^2 - x + 20$

c. $x^4 - x^3 - 21x^2 + x + 20$

d. $x^4 - 22x^2 + x + 20$

13. What is the fourth term of the expansion of $(2x - 1)^5$?

a. -1

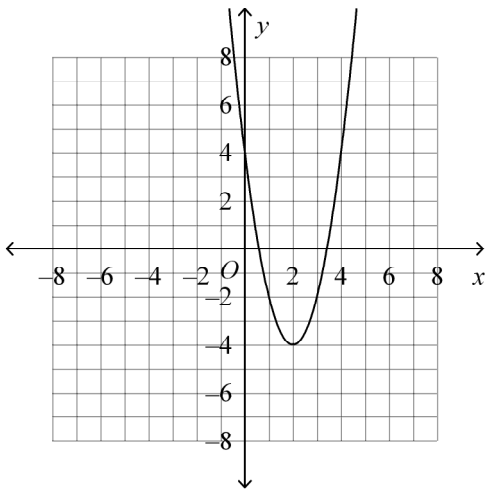
b. 1

c. $-10x$

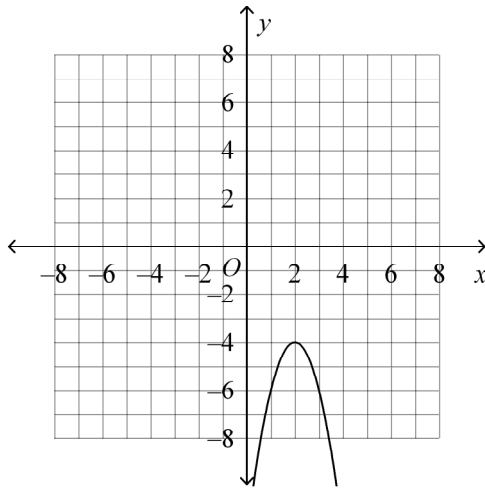
d. $10x$

14. Which is the graph of $y = -2(x - 2)^2 - 4$?

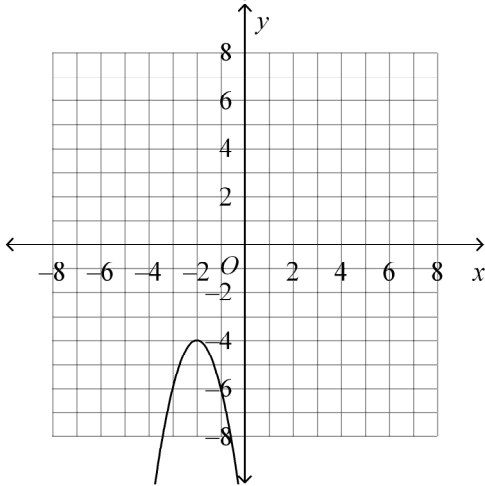
a.



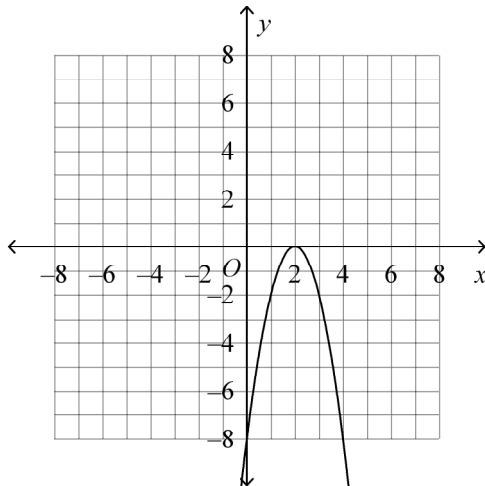
c.



b.



d.



15. Let $f(x) = -2x - 5$ and $g(x) = -3x - 6$. Find $f(g(-2))$.

a. -1

b. -3

c. 0

d. -5

16. Owen has 6 different kinds of cereal. For breakfast he combines 2 kinds of cereal in one bowl. How many mixtures of cereal are possible?

a. 3

c. 15

b. 360

d. 30

17. Solve: $3|3x + 4| - 7 = 5$

a. $x = 0$ or $x = -2\frac{2}{3}$

c. $x = \frac{8}{9}$ or $x = -2\frac{2}{3}$

b. $x = \frac{8}{9}$ or $x = 0$

d. $x = \frac{8}{9}$ or $x = -\frac{2}{9}$

18. Solve: $x^2 + 18x + 81 = 25$

a. -4, 4

c. -4, -14

b. 14, 4

d. 14, -14

19. Simplify: $(2 - 5i) - (3 + 4i)$
 a. $-10i$ c. $1 + 9i$
 b. $5 - i$ d. $-1 - 9i$
20. Factor: $27x^3 - 64$
 a. $(3x + 4)(9x^2 - 12x + 16)$ c. $(3x - 4)^3$
 b. $(3x - 4)(3x + 4)^2$ d. $(3x - 4)(9x^2 + 12x + 16)$
21. 9P_4
 a. 3,024 b. 9 c. 126 d. 362,880
22. Solve: $-3x^2 + 7x = -5$
 a. $\frac{7}{3} \pm \frac{\sqrt{67}}{3}$ c. $-\frac{7}{3} \pm \frac{\sqrt{109}}{3}$
 b. $-\frac{7}{6} \pm \frac{\sqrt{22}}{6}$ d. $\frac{7}{6} \pm \frac{\sqrt{109}}{6}$
23. A pizza restaurant offers 8 toppings. How many 4-topping pizzas are possible?
 a. 24 c. 70
 b. 1680 d. 2520
24. A manufacturer of shipping boxes has a box shaped like a cube. The side length is $5a + 4b$. What is the volume of the box in terms of a and b ?
 a. $125a^3 - 300a^2b + 240ab^2 - 64b^3$ c. $125a^3 + 300a^2b + 240ab^2 + 64b^3$
 b. $a^3 - 3a^2b + 3ab^2 - b^3$ d. $a^3 + 3a^2b + 3ab^2 + b^3$
25. Solve: $\begin{cases} x - 3y - z = -9 \\ -2x + y + 2z = 3 \\ 2x + y + 3z = 8 \end{cases}$
 a. $(1, 3, 1)$ b. $(1, 3, -1)$ c. $(-1, 3, 1)$ d. $(1, -3, 1)$
26. There are 6 people on the ballot for regional judges. Voters can vote for any 4. Voters can choose to vote for 0, 1, 2, 3, or 4 judges. In how many different ways can a person vote?
 a. 6 b. 57 c. 15 d. 5
27. Verne has 7 math books to line up on a shelf. Jenny has 5 English books to line up on a shelf. In how many more orders can Verne line up his books than Jenny?
 a. 4,920 b. 120 c. 20 d. 5,040
28. There are 10 students participating in a spelling bee. In how many ways can the students who go first and second in the bee be chosen?
 a. 3,628,800 ways c. 90 ways
 b. 1 way d. 45 ways

**Algebra 2 - Chapters 6 & 7 Practice Test
Answer Section**

1. B
2. A
3. A
4. D
5. D
6. B
7. A
8. A
9. D
10. C
11. C
12. C
13. D
14. C
15. D
16. C
17. A
18. C
19. D
20. D
21. A
22. D
23. C
24. C
25. A
26. B
27. A
28. C
29. C
30. A
31. B
32. A
33. C
34. D
35. C
36. D
37. C
38. A