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| 1. Write an algebraic expression for the phrase.<br>*the product of g and 4*<br><br>**Answer: a. 4g** | 2. Write an algebraic expression for the phrase.<br>–2 times the quantity *q* minus 3<br><br>**Answer: d. –2(*q* – 3)** |
| 3. Evaluate the expression $(ab)^2$ for *a* = 4 and *b* = 3<br><br>**Answer: d. 144** | 4. Simplify the expression –9 + 6.<br><br>**Answer: b. -3** |


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| 5. Simplify the expression $\frac{(-9)(-8)}{(-2)}$.<br><br>**Answer: d. -36** | 6. Simplify the expression $(-2.7)^0$.<br><br>**Answer: c. 1** |
| 7. Simplify the expression $\left(k^2\right)^4$.<br><br>**Answer: d.** $k^8$ | 8. Simplify the expression $\frac{k^{14}}{k^7}$.<br><br>**Answer: a.** $k^7$ |


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| 9. Simplify the expression $[2 \cdot (10 + 5)] - 5$.<br><br>**Answer: c. 25** | 10. Evaluate $b - 2a - c$ for $a = -7$, $b = 3$, and $c = -7$.<br><br>**Answer: a. 24** |
| 11. Solve the equation $\frac{y}{4} = -10$.<br><br>**Answer: d. y = -40** | 12. Solve the equation $\frac{3}{7}x + 6 = 9$.<br><br>**Answer: a. x= 7** |


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| 13. Solve the equation $3(y + 6) = 30$.<br><br>**Answer: c. 4** | 14. Find the $x$- and $y$-intercept of the line $2x + 3y = -18$.<br><br>**Answer:**<br>***d.*** ***x*-intercept is –9; *y*-intercept is –6.** |
| 15. Tell whether the lines for each pair of equations are *parallel*, *perpendicular*, or *neither*.<br>$7x - 4y = 4$<br>$x - 4y = 3$<br><br>**Answer: Neither** | 16. Write the number in standard notation. $9 \times 10^4$.<br><br>**Answer: c. 90,000** |


SCORE_____

17. Between what two consecutive integers is $\sqrt{151}$?

**Answer: c. 12 and 13**

18. Write $5^2$ in standard form.

**Answer: b. 25**

19. Simplify the expression

$$3\left[(15-3)^2 \div 4\right]$$

**Answer: 108**

20. Simplify the expression $\sqrt{6}+2\sqrt{6}$.

**Answer:** $3\sqrt{6}$


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| 21. Simplify the expression $2k^8 \cdot 3k^3$.<br><br>**Answer:** $6k^{11}$ | 22. Simplify the expression $\lvert -15 \rvert$.<br><br>**Answer: 15** |
| 23. Evaluate $47 + 2d$, for $d = 3$.<br><br>**Answer: 53** | 24. Write 0.63 as a percent.<br><br>**Answer: 63%** |


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| 25. Write $3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3$ using an exponent.<br><br>**Answer:** $3^6$ | 26. Solve the equation $z^2 - 6z - 27 = 0$ by factoring.<br><br>**Answer: *z* = –3 or *z* = 9** |
| 27. Simplify $\sqrt{\frac{144}{49}}$.<br><br>**Answer:** $\frac{12}{7}$ | 28. Simplify the radical expression $\frac{4}{\sqrt{21}}$ by rationalizing the denominator.<br><br>**Answer:** $\frac{4\sqrt{21}}{21}$ |


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| 29. Simplify the radical expression $\sqrt{144}$.<br><br>**Answer: 12** | 30. Factor the expression $r^2 - 49$.<br><br>**Answer: (r + 7)(r - 7)** |
| 31. Factor the expression $x^2 - x - 42$.<br><br>**Answer: (*x* – 7)(*x* + 6)** | 32. Factor the expression $d^2 + 10d + 9$.<br><br>**Answer: (*d* + 9)(*d* + 1)** |


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| 33. Expand $(2x - 6)^2$<br><br>**Answer: $4x^2 - 24x + 36$** | 34. Simplify the product using FOIL<br>$(3x - 7)(3x - 5)$.<br><br>**Answer: $9x^2 - 36x + 35$** |
| 35. Simplify the product $2n(n^2 + 3n + 4)$.<br><br>**Answer: $2n^3 + 6n^2 + 8n$** | 36. Simplify the product $-8(-9)$.<br><br>**Answer: 72** |


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| 37. Simplify the sum. $(4u^3 + 4u^2 + 2) + (6u^3 - 2u + 8)$.<br><br>**Answer: $10u^3 + 4u^2 - 2u + 10$** | 38. Write the polynomial in standard form $4g - g^3 + 3g^2 - 2$.<br><br>**Answer: $-g^3 + 3g^2 + 4g - 2$** |
| 39. Simplify the difference $(-7x - 5x^4 + 5) - (-7x^4 - 5 - 9x)$.<br><br>**Answer: $2x^4 + 2x + 10$** | 40. Write an equation in point-slope form for the line through the point (10,-9) with the given slope -2.<br><br>**Answer: $y + 9 = -2(x - 10)$** |


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| 41. Write an equation of a line with the slope of 1 and *y*-intercept of 4.<br><br>**Answer: *y* = x + 4** | 42. Find the slope and *y*-intercept of the line $y = \frac{4}{3}x - 3$.<br><br>**Answer: slope = $\frac{4}{3}$; y-intercept = –3** |
| 43. State the slope of a horizontal line.<br><br>**Answer: 0** | 44. Find the slope of the line that passes through the pair of points (1, 7), (10, 1).<br><br>**Answer: -2/3** |


SCORE_____

45. Solve the inequality $c - 3 > 6$.

Answer: $c > 9$

46. Solve the inequality $-\frac{x}{4} \leq 2$.

Answer:

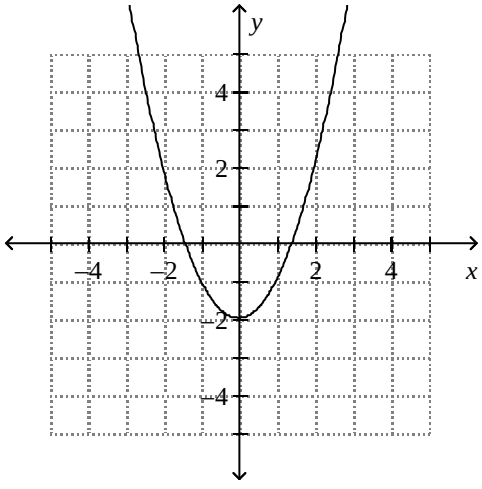
$x \geq -8$

47. Solve the inequality $-8 \leq 2x - 4 < 4$.

**Answer:** $-2 \leq x < 4$

48. Graph the function $y = x^2 - 2$.

**Answer:**





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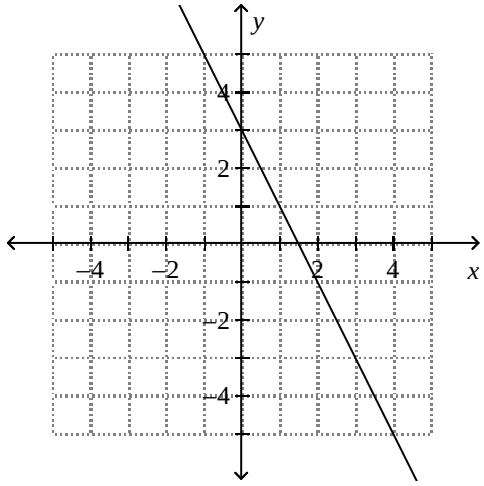
49. Graph the function $y = -2x + 3$.

**Answer:**




50. Solve the equation $3p - 1 = 5(p - 1) - 2(7 - 2p)$.

**Answer: p = 3**

51. Solve the equation $9d = -54$.

**Answer: d = -6**

52. Solve the equation $-49 = x - 50$.

**Answer: x = 1**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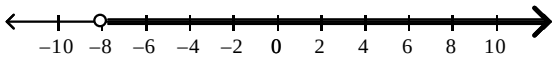
| 53. Solve the equation 14 = *t* + 7.<br><br>**Answer: t = 7** | 54. Write an inequality for the graph<br>  <br><br>.<br><br>**Answer: *x* > –8** |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