

Trig 1st 9 weeks Review 2019-20

Name: _____

PUT E IF NO ANSWERS ARE CORRECT.

- _____1. Solve for n: $4(2n - 1) - (5n - 1) = 13$
A. $n = 6$ B. $n = -3\frac{1}{2}$ C. $n = 4\frac{1}{3}$ D. $n = 5\frac{1}{3}$
- _____2. Factor $x^3 - 27$
A. $(x - 3)(x^2 - 3x + 9)$ B. $(x + 3)(x^2 - 3x + 9)$ C. $(x + 3)(x^2 + 3x + 9)$
- _____3. Solve for n: $3(2n - 1) = 2(6n - 2)$
A. $n = -4$ B. $n = \frac{1}{6}$ C. $n = 1\frac{1}{3}$ D. $n = 2$
- _____4. Solve for n: $4(2n + 5) + 2(3n + 4) = 10n + 22$
A. $n = -2$ B. $n = \frac{1}{2}$ C. $n = -3$ D. $n = 2$
- _____5. Simplify $(2n^3)^3$
A. $6n^6$ B. $6n^9$ C. $8n^6$ D. $8n^9$
- _____6. Simplify $(5n^5)^2$
A. $10n^7$ B. $25n^7$ C. $10n^{10}$ D. $25n^{10}$
- _____7. $\left(\frac{3}{2}\right)^{-3}$
A. $\frac{6}{27}$ B. $\frac{8}{27}$ C. $\frac{27}{8}$ D. $-\frac{8}{27}$
- _____8. Simplify $(x + 2)(2x^2 + 5x + 1)$
A. $2x^3 + 9x^2 + x + 2$ B. $2x^3 + 9x^2 + 11x + 2$
C. $2x^3 + 3x^2 + 11x + 2$ D. $2x^3 + 3x^2 + x + 2$
- _____9. Simplify $2(2n - 4) - (6n - 2)$
A. $-2n - 10$ B. $-2n - 6$ C. $2n - 10$ D. $-8n + 6$
- _____10. Factor $4ny^2 - 8ny^3$
A. $4ny^2(-2y)$ B. $4ny^2(1 - 2y)$ C. $2ny(2y - 4y^2)$ D. $2ny^2(2 - 4y)$
- _____11. Simplify $(2n^3 + 5n)(4n^3 + 2n)$
A. $8n^6 + 24n^4 + 10n^2$ B. $8n^9 + 24n^4 + 10n^2$
C. $8n^6 + 20n^3 + 10n$ D. $8n^9 + 24n^3 + 10n^2$
- _____12. Simplify $(-2n^4)^3$
A. $-6n^7$ B. $8n^7$ C. $-6n^{12}$ D. $-8n^7$

_____13. Perform the following division $n+4 \overline{)n^2+5n+2}$

A. $n+9+\frac{-34}{n+4}$ B. $n+1+\frac{-2}{n+4}$ C. $n+1+\frac{6}{n+4}$ D. $n+9+\frac{38}{n+4}$

_____14. Perform the following division $n-2 \overline{)n^2+3n-1}$

A. $n+5+\frac{-11}{n-2}$ B. $n+5+\frac{9}{n-2}$ C. $n+1+\frac{1}{n-2}$ D. $n+1+\frac{-3}{n-2}$

_____15. Simplify $\sqrt[4]{a^8b^2c^{13}}$

A. $ac^3\sqrt[4]{b^2c}$ B. $a^2c^3\sqrt[4]{b^2c}$ C. $a^2bc^3\sqrt[4]{c}$ D. $a^2c^2\sqrt[4]{b^2c^2}$

_____16. $4^{-1} = ?$

A. 4 B. $\frac{1}{4}$ C. 16 D. 32

_____17. Simplify $\left(\frac{n^2y^{-2}}{a^{-4}}\right)^2$

A. $\frac{n^4y^4}{a^{16}}$ B. $\frac{n^4y^4}{a^8}$ C. $\frac{n^4a^{16}}{y^4}$ D. $\frac{n^4a^8}{y^4}$

_____18. Simplify $(2a^{-3})^{-2}$

A. $\frac{4}{a^6}$ B. $4a^6$ C. $\frac{a^6}{4}$ D. $\frac{a^5}{4}$

_____19. Simplify $\left(\frac{2a^3}{5b^2}\right)^{-2}$

A. $\frac{25b^4}{4a^6}$ B. $\frac{4b^4}{25a^6}$ C. $\frac{25a^6}{4b^4}$ D. $\frac{25a^6b^4}{4}$

_____20. Simplify $(a^{-3}b^{-2})^{-2}$

A. $\frac{-1}{a^6b^4}$ B. $\frac{a^6}{b^4}$ C. $\frac{1}{a^6b^4}$ D. a^6b^4

_____21. Perform the following division $n+2 \overline{)n^2+5n+2}$

A. $n+3+\frac{8}{n+2}$ B. $n+7+\frac{-12}{n+4}$ C. $n+3+\frac{-4}{n+2}$ D. $n+7+\frac{16}{n+4}$

_____22. Simplify $\frac{c^3w^{-5}h^{-1}}{c^{-1}w^{-2}h}$

A. $\frac{c^4}{w^3h^2}$ B. $\frac{c^3}{cw^3h^2}$ C. $\frac{w^3}{h^2c^4}$ D. $\frac{c^4h^2}{w^3}$

_____23. Simplify $\frac{y^3e^{-5}s^3}{y^7e^2s^{-4}}$

A. $\frac{s^7}{y^4e^7}$ B. $\frac{y^4s^7}{e^7}$ C. $\frac{s^7e^7}{y^4}$ D. $\frac{se^7}{y^4}$

_____24. Simplify $\sqrt[3]{x^4y^{10}}$

A. $xy^4\sqrt[3]{xy}$ B. $xy^3\sqrt[3]{xy^2}$ C. $xy^3\sqrt[3]{xy}$ D. $xy\sqrt[3]{y}$

_____25. Simplify $n^{-3} \cdot y^5 \cdot n^{-2} \cdot y^{-3}$

A. $\frac{y^3}{n^5}$ B. $\frac{y^2}{n^5}$ C. n^5y^2 D. ny^2

_____26. Simplify $(2s^{-3}t^2u^{-1}d)^{-3}$

A. $\frac{u^3}{8t^6d^3s^9}$ B. $\frac{s^9u^3}{8t^6d^3}$ C. $\frac{s^9}{8u^3t^6d^3}$ D. $\frac{8s^9u^3}{t^6d^3}$

_____27. Simplify $\frac{-8ny}{10ny^3}$

A. $\frac{-4}{5y^2}$ B. $\frac{-4y}{5y^3}$ C. $\frac{-4y^2}{5}$ D. $\frac{-8y^2}{10}$

_____28. Factor $n^3 + 8$

A. $(n + 2)(n^2 + 2n + 4)$ B. $(n + 2)(n^2 - 2n + 4)$
 C. $(n - 4)(n^2 + 4n + 2)$ D. $(n + 4)(n^2 - 4n + 2)$

_____29. Simplify $\sqrt[3]{16x^4y^8}$

A. $xy^2\sqrt[3]{2xy^2}$ B. $4xy^2\sqrt[3]{xy^2}$ C. $2xy^2\sqrt[3]{2xy^2}$ D. $xy^2\sqrt[3]{16xy^2}$

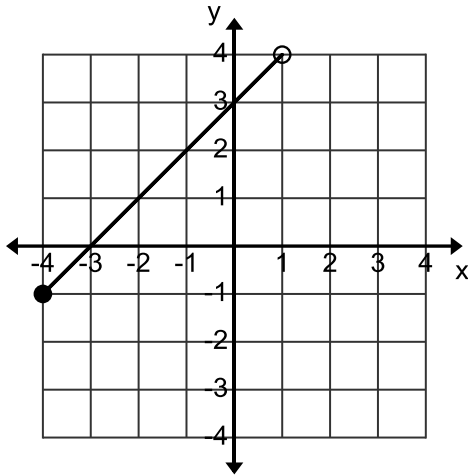
_____30. Simplify $\left(\frac{a^{-2}b^2}{ab^{-4}c}\right)^{-2}$

A. $\frac{a^6}{b^{12}c^2}$ B. $\frac{a^6c^2}{b^{12}}$ C. $\frac{a^6b^{12}}{c^2}$ D. $\frac{a^6c^2}{b^4}$

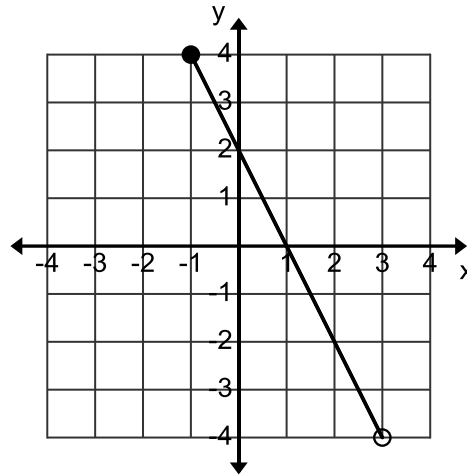
- _____31. Simplify $(-5y^4)(3y^4)$
 A. $-15y^4$ B. $-2y^4$ C. $-15y^8$ D. $-15y^{16}$
- _____32. Simplify $\frac{n^2 + 7n + 12}{n^2 + 9n + 20}$ Don't worry about restrictions.
 A. $\frac{n-4}{n+4}$ B. $\frac{n+2}{n+4}$ C. $\frac{n+2}{n-4}$ D. $\frac{n-2}{n+2}$
- _____33. Factor $n^3 + 2n - n^2 - 2$
 A. $(n^2 - 1)(n + 2)$ B. $(n^2 + 2)(n - 1)$
 C. $(n^2 + 1)(n - 2)$ D. $(n^2 - 2)(n + 1)$
- _____34. Simplify $\sqrt[4]{160}$
 A. $2\sqrt[4]{20}$ B. $2\sqrt[4]{10}$ C. $2\sqrt[4]{5}$ D. $2\sqrt[4]{2}$
- _____35. Simplify $\frac{3 \pm \sqrt{27}}{3}$
 A. $1 \pm \sqrt{3}$ B. $1 \pm \sqrt{9}$ C. $1 \pm 2\sqrt{3}$ D. $1 \pm 3\sqrt{3}$
- _____36. Simplify $\frac{n^3 + 5n^2 + 2n + 10}{n^3 + 2n^2 + 2n + 4}$ Don't worry about restrictions.
 A. $\frac{n+5}{n+1}$ B. $\frac{n+5}{n+2}$ C. $\frac{n-5}{n+2}$ D. $\frac{n+2}{n+5}$
- _____37. Simplify $\sqrt{20a^3y^{10}}$
 A. $2ay^5\sqrt{5ay}$ B. $5ay^5\sqrt{2a}$ C. $2ay^5\sqrt{5a}$ D. $5ay^5\sqrt{2ay}$
- _____38. Factor $8x^3 - 27y^3$
 A. $(2x - 3y)(4x^2 + 6xy + 9y^2)$ C. $(2x + 3y)(4x^2 - 6xy + 9y^2)$
 B. $(2x - 3y)(4x^2 + 6xy - 9y^2)$ D. $(2x - 3y)(8x^2 + 6xy + 9y^2)$
- _____39. Simplify $(a^4n^3x^6)(a^2n^3x^6)$
 A. $a^8n^6x^{12}$ B. $a^6n^6x^{12}$ C. $a^6n^6x^{36}$ D. $a^6n^9x^{12}$
- _____40. Simplify $\sqrt{-80a^2}$
 A. $4a\sqrt{5}$ B. $2ai\sqrt{10}$ C. $4ai\sqrt{5}$ D. $10ai\sqrt{2}$
- _____41. Simplify $n^{-30} \cdot y^{30} \cdot n^{40} \cdot y^{10}$
 A. $n^{10}y^{40}$ B. $n^{70}y^{20}$ C. $n^{10}y^{20}$ D. $n^{70}y^{40}$

- _____42. Simplify $(2n^3y^4)^2 + n(n^5)y^8$
 A. $5n^6y^8$ B. $3n^6y^8$ C. $5n^3y^4$ D. $8n^{12}y^{16}$
- _____43. Simplify $\frac{n^2 - 10n + 25}{n^2 - 6n + 5}$ Don't worry about restrictions.
 A. $\frac{n-5}{n+1}$ B. $\frac{n-5}{n+5}$ C. $\frac{n-5}{n-1}$ D. $\frac{n-1}{n+5}$
- _____44. Simplify $(3n^2y^4)^2 + n(n^4)y^3y^5$
 A. $10n^4y^8$ B. $10n^5y^8$ C. $7n^5y^8$ D. $8n^4y^8$
- _____45. Factor $16a^4b^2 + 20ab^5$
 A. $ab^2(16a^3 + 20b^3)$ B. $ab(16a^3b + 20b^4)$
 C. $4ab^2(4a^3 + 5b^3)$ D. None of the above
- _____46. Factor $8n^3 + 27y^3$
 A. $(2n + 3y)(4n^2 + 6ny + 9y^2)$ B. $(2n + 3y)(4n^2 - 6ny + 9y^2)$
 C. $(2n - 3y)(4n^2 + 6ny + 9y^2)$ D. $(2n + 3y)(4n^2 - 6ny - 9y^2)$
- _____47. Factor $8n^3 + 125$
 A. $(2n + 5)(4n^2 + 10n + 25)$ B. $(2n - 5)(4n^2 + 10n + 25)$
 C. $(2n + 5)(4n^2 - 10n + 25)$ D. $(2n - 5)(8n^2 + 10n + 25)$
- _____48. Factor $3n^3 + 12n^2 + 2n + 8$
 A. $(n + 2)(3n^2 + 4)$ B. $(3n + 4)(n^2 + 2)$
 C. $(3n + 2)(n^2 + 4)$ D. $(n + 4)(3n^2 + 2)$
- _____49. Factor $y^5 + 3y^3 + 4y^2 + 12$
 A. $(y^2 + 4)(y^3 + 3)$ B. $(y^2 + 3)(y^3 + 4)$ C. $(y^4 + 3)(y + 4)$ D. $(y + 3)(y^5 + 4)$
- _____50. If $f(x) = -3x^2$, what is $f(-2)$?
 A. -12 B. 12 C. -36 D. 36
- _____51. If $f(x) = 3x - 1$ and $g(x) = 2x - 1$, what is $g(f(2))$?
 A. 8 B. 9 C. 14 D. 13
- _____52. If $f(x) = 5x - 2$ and $g(x) = 2x + 1$, what is $f(g(x))$?
 A. $10x - 3$ B. $10x - 13$ C. $10x + 3$ D. $10x - 7$
- _____53. If $f(x) = 4x - 5$, what is $f(f(x))$?
 A. $16x - 25$ B. $16x - 15$ C. $16x + 15$ D. $16x + 25$
- _____54. What is the domain of $f(x) = \sqrt{x+6}$?
 A. \mathbf{R} except $x \neq -6$ B. $\mathbf{R}: x > -6$ C. $\mathbf{R}: x \geq -6$ D. \mathbf{R}
- _____55. What is the domain of $f(x) = \frac{2x}{2x-6}$?
 A. \mathbf{R} except $x \neq 3$ B. $\mathbf{R}: x > -3$ C. $\mathbf{R}: x \geq 3$ D. \mathbf{R}

- ____ 56. What is the domain of $f(x) = \sqrt{10-x}$?
 A. \mathbf{R} except $x \neq 10$ B. $\mathbf{R}: x \leq 10$ C. $\mathbf{R}: x \geq 10$ D. \mathbf{R}
- ____ 57. What is the domain of $y = x - 4$?
 A. $\mathbf{R}: x > 4$ B. \mathbf{R} except $x \neq 4$ C. $\mathbf{R}: x < 4$ D. \mathbf{R}



I



II

- ____ 58. What is the **domain** of the graph I above?
 A. $\mathbf{R}: -1 < x \leq 4$ B. $\mathbf{R}: -1 \leq x < 4$ C. $\mathbf{R}: -4 < x \leq 1$ D. $\mathbf{R}: -4 \leq x < 1$
- ____ 59. What is the **range** of the graph I above?
 A. $\mathbf{R}: -1 < y \leq 4$ B. $\mathbf{R}: -1 \leq y < 4$ C. $\mathbf{R}: -4 < y \leq 1$ D. $\mathbf{R}: -4 \leq y < 1$
- ____ 60. What is the **domain** of the graph II above?
 A. $\mathbf{R}: -1 < x \leq 3$ B. $\mathbf{R}: -1 \leq x < 3$ C. $\mathbf{R}: -4 < x \leq 4$ D. $\mathbf{R}: -4 \leq x < 4$
- ____ 61. What is the **range** of the graph II above?
 A. $\mathbf{R}: -1 < y \leq 3$ B. $\mathbf{R}: -1 \leq y < 3$ C. $\mathbf{R}: -4 < y \leq 4$ D. $\mathbf{R}: -4 \leq y < 4$

For 62 – 71, tell how many possibilities exist.

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|-----------------------------------|------------------------------------|
| ____ 62. $8x^2 + \square x + 15$ | ____ 63. $5x^2 + \square x + 21$ |
| ____ 64. $18x^2 + \square x + 20$ | ____ 65. $12x^2 + \square x + 30$ |
| ____ 66. $3x^2 + \square x + 12$ | ____ 67. $100x^2 + \square x + 40$ |
| ____ 68. $20x^2 + \square x + 20$ | ____ 69. $24x^2 + \square x + 30$ |
| ____ 70. $25x^2 + \square x + 12$ | ____ 71. $100x^2 + \square x + 40$ |

