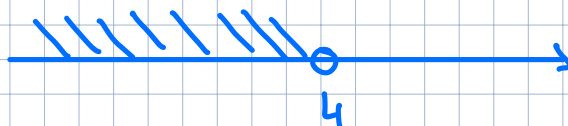**1.1:** 21, 24, 27, 35, 42, 52, 63, 67, 69, 73, 78
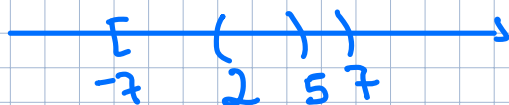
1.2: 10, 16, 29, 41, 50, 56, 66, 69, 76

1.1.

21. $\left\{ ..., \frac{1}{3}, \frac{1}{5}, \frac{1}{7}, \frac{1}{9}, ... \right\} = \left\{ \frac{1}{2x+1} \mid x \text{ is an integer} \right\}$

24. $\{ x \mid x < 4 \} = (-\infty, 4)$

27. $\mathbb{R}_+ = (0, \infty)$

35. $[-7, 7) \cup (2, 5) = [-7, 7)$

42. $\mathbb{N} \cup \mathbb{R} = \boxed{\mathbb{R}}$

52. $-|-\sqrt{1-9}| - |-9|| = -|-3-9| = -|-12| = \boxed{-12}$

63. $3x^3 + 5x - 2 = ?$

$x = -3$

$3 \cdot (-3)^3 + 5 \cdot (-3) - 2 = 3 \cdot (-27) - 15 - 2 = \boxed{-98}$

67. $|x - 9y| - (8z - 8) = ?$

$x = -3$
$y = 1$
$z = 5$

$|-3 - 9| - (8 \cdot 5 - 8) = 12 - (32) = \boxed{-20}$

69. $\underbrace{(x-y)}_{A}\underbrace{(z^2)}_{B} = \underbrace{(z^2)}_{B}\underbrace{(x-y)}_{A}$

$A \cdot B = B \cdot A \quad - \boxed{\text{commutative property}}$

73. $\underbrace{4}_{A} + (\underbrace{-3}_{B} + \underbrace{x}_{C}) = (\underbrace{4}_{A} - \underbrace{3}_{B}) + \underbrace{x}_{C} = 1 + x$

$A + (B + C) = (A + B) + C \quad - \boxed{\text{associative property}}$

78. $(a+b)(x) = 0 \Rightarrow a+b = 0 \quad \text{or} \quad x = 0$

$\underbrace{(a+b)}_{A} \underbrace{(x)}_{B}$

$A \cdot B = 0 \Rightarrow A = 0 \quad \text{or} \quad B = 0$

$\boxed{\text{Zero-factor property}}$

$\boxed{1.2}$

10. $\dfrac{x^7 y^{-3} z^{12}}{x^{-1} z^9} = \boxed{x^8 y^{-3} z^3}$

16. $\left(\left(4a^2 B^{-5} \right)^{-1} \right)^{-3} = \left(4a^2 B^{-5} \right)^3 = 4^3 \cdot a^6 \cdot B^{-15} =$

$= \boxed{64 a^6 B^{-15}}$

29. $\dfrac{(2 \cdot 10^3)(7 \cdot 10^{-2})}{(5 \cdot 10^4)} = \dfrac{2 \cdot 7 \cdot 10^1}{5 \cdot 10^4} = \dfrac{14}{5} \cdot \dfrac{1}{10^3} = \dfrac{14}{5000} =$

$= \dfrac{7}{2500} = \boxed{2.8 \cdot 10^{-3}}$

41. $\sqrt[3]{-\dfrac{27}{125}} = \boxed{\dfrac{-3}{5}}$

50. $\sqrt[3]{\dfrac{a^3 b^{12}}{27 c^6}} = \boxed{\dfrac{a\, b^4}{3 \cdot c^2}}$

56. $\dfrac{10}{\sqrt{7}-\sqrt{2}} = \dfrac{10(\sqrt{7}+\sqrt{2})}{(\sqrt{7}-\sqrt{2})(\sqrt{7}+\sqrt{2})} = \dfrac{10(\sqrt{7}+\sqrt{2})}{7-2} =$

$= 2(\sqrt{7}+\sqrt{2}) = \boxed{2\sqrt{7}+2\sqrt{2}}$

66. $-x^2 \sqrt[3]{54x} + 3\sqrt[3]{2x^7} = -x^2 \sqrt[3]{9\cdot 6 \cdot x} + 3\sqrt[3]{2 \cdot x^6 \cdot x} =$

$= -3\sqrt[3]{2 \cdot x^7} + 3\sqrt[3]{2 \cdot x^7} = \boxed{0}$

69. $\sqrt[3]{\sqrt[4]{x^{36}}} = \sqrt[3]{x^{36/4}} = \sqrt[3]{x^9} = \boxed{x^3}$

76. $\dfrac{(a-b)^{-\frac{2}{3}}}{(a-b)^{-2}} = (a-b)^{-\frac{2}{3}+2} = (a-b)^{\frac{-2+6}{3}} = \boxed{(a-b)^{\frac{4}{3}}}$