

H.W. Mountz Rising Geometry Summer Packet 2020
Completed Algebra 1
The packet should be completed **without** a calculator

Name _____

For # 1 - 5, Solve each equation

1. $11x + 1 = -1 + x$

2. $\frac{2}{3}x + 5 = 3$

3. $2|x - 3| - 5 = 7$

4. $-2 + 5x - 7 = 3x - 9 + 2x$

5. $3(x + 4) - 1 = -7$

For # 6 & 7, Solve the literal equation for y.

6. $2x - 4y = 20$

7. $a = 9y + 3yx$

For #8 - 11, Solve each inequality.

8. $\frac{x}{5} - 5 \geq -9$

9. $-7 < 2x - 1 < 10$

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10. $|2x + 8| > 4$

11. $4|-3b + 5| - 9 < 7$

12. Evaluate $f(x) = 4 - 3x$ when $x = -3$

13. Find the value of x so that the function has the given value.

$$r(x) = -5x - 1 ; r(x) = 19$$

For # 14 - 17, Graph each linear function

14. $g(x) = -2x - 3$

15. $8x - 4y = 16$

16. $y = 4$

17. $x = -2$

18. Graph the absolute value function

$$f(x) = |x - 4| + 2$$

19. Graph the piecewise function

$$y = \begin{cases} 2x + 4, & \text{if } x \leq -1 \\ \frac{1}{3}x - 1, & \text{if } x > -1 \end{cases}$$

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For # 20 - 22, Write an equation of the line with the given characteristics.

20. $\text{slope} = \frac{2}{5}$; y -intercept = -7

21. passes through $(-3, 2)$ and $(6, -1)$

22. perpendicular to the line $y = \frac{1}{4}x - 9$; passes through $(1, 1)$

For #23 - 25, Solve the system of linear equations.

23. $x = y - 11$
 $x - 3y = 1$

24. $6x - 4y = 9$
 $9x - 6y = 15$

25. $y = 4x + 4$
 $-8x + 2y = 8$

26. Graph the system of linear inequalities.

$$y \geq -\frac{2}{3}x + 1$$
$$-3x + y > -2$$

For # 27 -28, Simplify the expression, using only positive exponents.

27. $\frac{b^{-5}}{a^0b^{-8}}$

28. $\left(\frac{2e^4}{5}\right)^{-3}$

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For #29 - 30. Solve the equation.

29. $2^x = \frac{1}{128}$

30. $256^{x+2} = 16^{3x-1}$

For # 31 - 33 , find the sum , difference or product.

31. $(-2p + 4) - (p^2 - 6p + 8)$

32. $(4s^4 + 2st + t) + (2s^4 - 2st - 4t)$

33. $(2w - 3)(3w + 5)$

For # 34 - 36, Factor completely.

34. $x^2 - 15x + 50$

35. $x^3 + 2x^2 - 9x - 18$

36. $-5x^2 - 22x + 15$

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For # 37 - 39, graph the quadratic function. State axis of symmetry and vertex.

37. $y = x^2 - 2x + 7$

38. $f(x) = -(x + 2)^2 + 3$

39. $y = -3(x + 3)(x + 1)$

For 40 and 41, tell whether the table represents a linear, exponential or quadratic function.

40.

x	-1	0	1	2	3
y	4	8	16	32	64

41.

x	-2	-1	0	1	2
y	-8	-2	0	-2	-8

For 42 - 45 Simplify each expression.

42. $\sqrt{125b}$

43. $\sqrt{48x^5}$

44. $\frac{12}{\sqrt{32}}$

45. $2\sqrt{5} + 2\sqrt{10} - 3\sqrt{20}$

For 46 -50, solve each equation.

46. $4x^2 = 64$

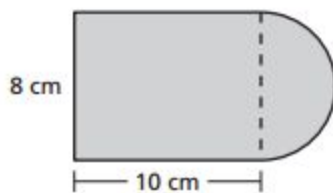
47. $(x - 8)^2 = 1$

48. $x^2 + 6x = 40$

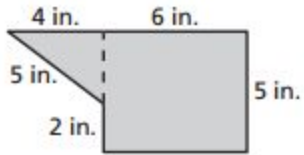
49. $-5x^2 + 10x = 5$

50. $2x^2 - x + 8 = 16$

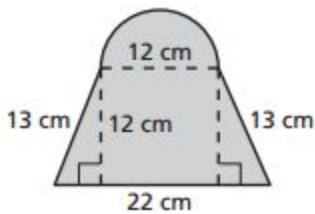
51. Find the perimeter of the figure.



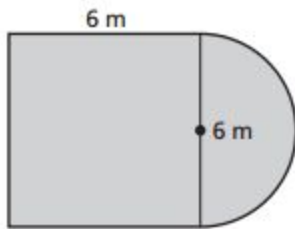
52. Find the perimeter of the figure.



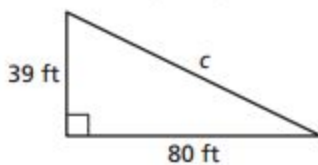
53. Find the area of the figure.



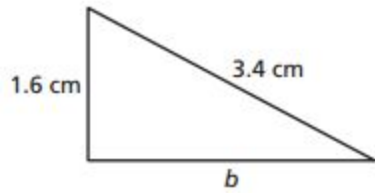
54. Find the area of the figure.



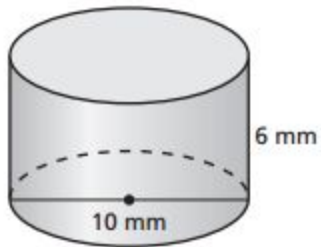
55. Find the missing length of the triangle.



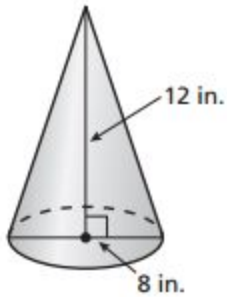
56. Find the missing length of the triangle.



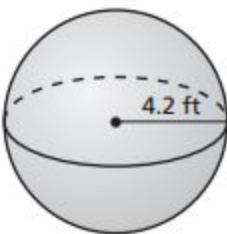
57. Find the volume of the solid.



58. Find the volume of the solid.

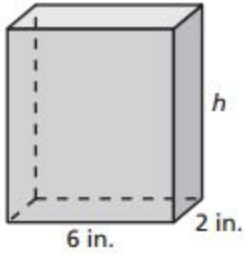


59. Find the volume of the solid.



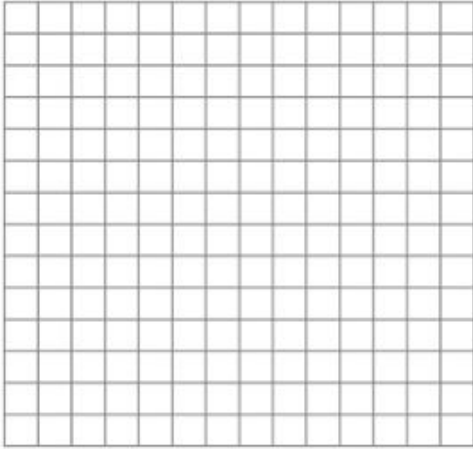
60. Write and solve an equation to find the missing dimension of the prism.

$$\text{Volume} = 84 \text{ in.}^3$$

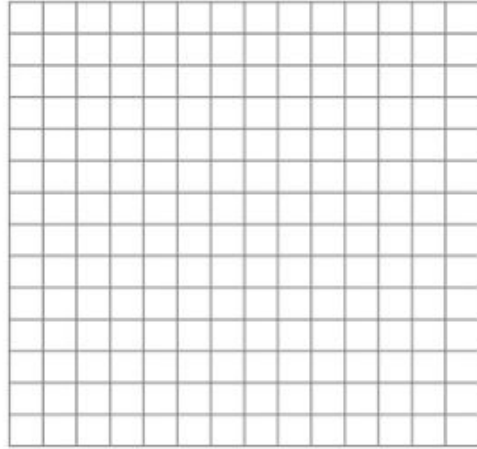


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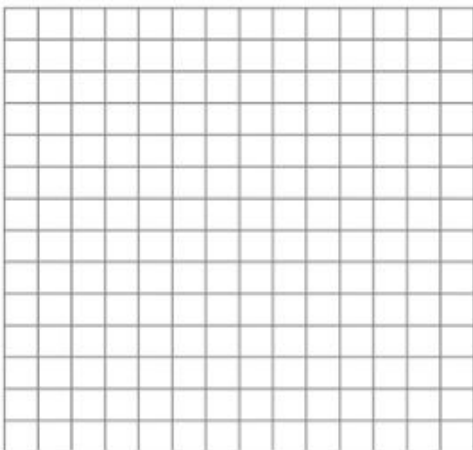
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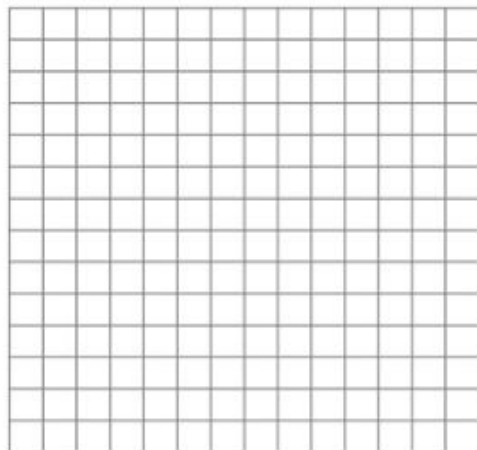
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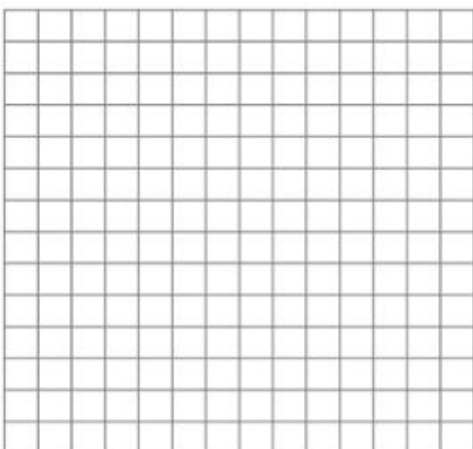
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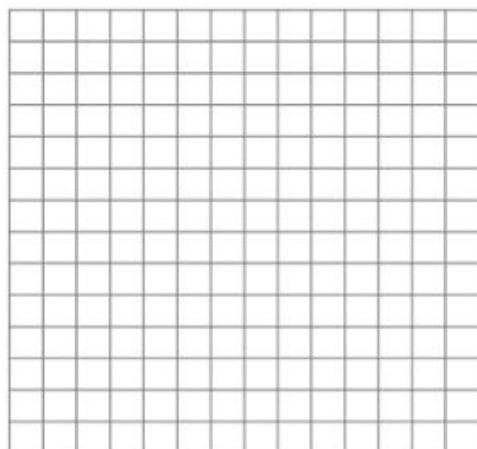
17.



18.

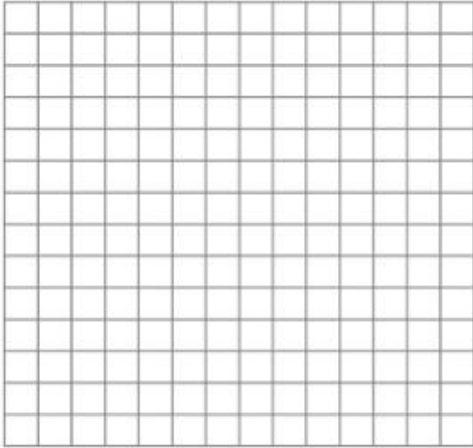


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26.



37.



38.



39.

