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Reza Nazari

Virginia Algebra I Practice Workbook

2026

The Most Comprehensive Review of Algebra I

By

Reza Nazari

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	c) solve practical problems involving inequalities; and d) represent the solution to a system of inequalities graphically.
A. 6	The student will a) determine the slope of a line when given an equation of the line, the graph of the line, or two points on the line; b) write the equation of a line when given the graph of the line, two points on the line, or the slope and a point on the line; and c) graph linear equations in two variables.
Reporting Category: Functions and Statistics **Number of Items: 16**	
Standards of Learning	
A. 7	The student will investigate and analyze linear and quadratic function families and their characteristics both algebraically and graphically, including a) determining whether a relation is a function; b) domain and range; c) zeros; d) intercepts; e) values of a function for elements in its domain; and f) connections between and among multiple representations of functions using verbal descriptions, tables, equations, and graphs.
A. 8	The student, given a data set or practical situation, will analyze a relation to determine whether a direct or inverse variation exists, and represent a direct variation algebraically and graphically and an inverse variation algebraically.
A. 9	The student will collect and analyze data, determine the equation of the curve of best fit in order to make predictions, and solve practical problems, using mathematical models of linear and quadratic functions.

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Order of Operations

Calculate.

1) $16 + (30 \div 5) =$ _____

2) $(3 \times 9) \div (-3) =$ _____

3) $57 - (3 \times 8) =$ _____

4) $(-12) \times (7 - 3) =$ _____

5) $(18 - 7) \times (6) =$ _____

6) $(6 \times 10) \div (12 + 3) =$ _____

7) $(13 \times 2) - (24 \div 6) =$ _____

8) $(-5) + (4 \times 3) + 8 =$ _____

9) $(4 \times 2^3) + (16 - 9) =$ _____

10) $(3^2 \times 7) \div (-2 + 1) =$ _____

11) $[-2(48 \div 2^3)] - 6 =$ _____

12) $(-4) + (7 \times 8) + 18 =$ _____

13) $(3 \times 7) + (16 - 7) =$ _____

14) $[3^3 \times (48 \div 2^3)] \div (-2) =$ _

15) $(14 \times 3) - (3^4 \div 9) =$ _____

16) $(96 \div 12) \times (-3) =$ _____

17) $(48 \div 2^2) \times (-2) =$ _____

18) $(56 \div 7) \times (-5) =$ _____

19) $(-2^2) + (7 \times 9) - 21 =$ ___

20) $(2^4 - 9) \times (-6) =$ _____

21) $[4^3 \times (50 \div 5^2)] \div (-16) =$

22) $(3^2 \times 4^2) \div (-4 + 2) =$ ____

23) $6^2 - (-6 \times 4) + 3 =$ _____

24) $4^2 - (5^2 \times 3) =$ _____

25) $(-4) + (12^2 \div 3^2) - 7^2 =$ __

26) $(3^2 \times 5) + (-5^2 - 9) =$ ____

27) $2[(3^2 \times 5) \times (-6)] =$ _____

28) $(11^2 - 2^2) - (-7^2) =$ _____

29) $(2^2 \times 5) - (64 \div 8) =$ _____

30) $2[(3^2 \times 4) + (35 \div 5)] =$ ___

31) $(4^2 \times 3) \div (-6) =$ _____

32) $3^2[(4^3 \div 16) - (3^3 \div 27)] =$

Integers and Absolute Value

Calculate.

1) $4 - |6 - 10| =$ _____

2) $|14| - \frac{|-18|}{3} =$ _____

3) $\frac{|8\times-8|}{4} \times \frac{|-20|}{5} =$ _____

4) $|12 \times 3| + \frac{|-81|}{9} =$ _____

5) $4 - |11 - 18| - |3| =$ ____

6) $|18| - \frac{|-12|}{4} =$ _____

7) $\frac{|5\times-8|}{10} \times \frac{|-22|}{11} =$ _____

8) $|9 \times 3| + \frac{|-36|}{4} =$ _____

9) $|-42 + 7| \times \frac{|-2\times5|}{10} =$ _____

10) $6 - |17 - 11| - |5| =$ ____

11) $|13| - \frac{|-54|}{6} =$ _____

12) $\frac{|9\times-4|}{12} \times \frac{|-45|}{9} =$ _____

13) $|-75 + 50| \times \frac{|-4\times5|}{5} =$ ____

14) $\frac{|-26|}{13} \times \frac{|-32|}{8} =$ _____

15) $14 - |8 - 18| - |-12| =$ ____

16) $|29| - \frac{|-20|}{5} =$ _____

17) $\frac{|3\times8|}{2} \times \frac{|-33|}{3} =$ _____

18) $|-45 + 15| \times \frac{|-12\times5|}{6} =$ ____

19) $\frac{|-50|}{5} \times \frac{|-77|}{11} =$ _____

20) $12 - |2 - 7| - |15| =$ _____

21) $|18| - \frac{|-45|}{15} =$ _____

22) $\frac{|7\times8|}{4} \times \frac{|-48|}{12} =$ _____

23) $\frac{|30\times2|}{3} \times |-12| =$ _____

24) $\frac{|-36|}{9} \times \frac{|-80|}{8} =$ _____

25) $|-30 + 9| \times \frac{|-8\times5|}{8} =$ _____

26) $|16| - \frac{|-18|}{3} =$ _____

27) $12 - |10 - 24| + |5| =$ ____

28) $|-38 + 8| \times \frac{|-5\times6|}{10} =$ _____



Proportional Ratios

Solve each proportion for x.

1) $\frac{4}{7} = \frac{8}{x}, x = _____$

2) $\frac{9}{12} = \frac{x}{8}, x = _____$

3) $\frac{3}{5} = \frac{12}{x}, x = _____$

4) $\frac{3}{10} = \frac{x}{50}, x = _____$

5) $\frac{3}{11} = \frac{15}{x}, x = _____$

6) $\frac{6}{15} = \frac{x}{45}, x = _____$

7) $\frac{6}{19} = \frac{12}{x}, x = _____$

8) $\frac{7}{16} = \frac{x}{32}, x = _____$

9) $\frac{18}{21} = \frac{54}{x}, x = _____$

10) $\frac{13}{15} = \frac{39}{x}, x = _____$

11) $\frac{9}{13} = \frac{72}{x}, x = _____$

12) $\frac{8}{30} = \frac{x}{180}, x = _____$

13) $\frac{3}{19} = \frac{9}{x}, x = _____$

14) $\frac{1}{3} = \frac{x}{90}, x = _____$

15) $\frac{25}{45} = \frac{x}{9}, x = _____$

16) $\frac{1}{6} = \frac{9}{x}, x = _____$

17) $\frac{7}{9} = \frac{63}{x}, x = _____$

18) $\frac{54}{72} = \frac{x}{8}, x = _____$

19) $\frac{32}{40} = \frac{4}{x}, x = _____$

20) $\frac{21}{42} = \frac{x}{6}, x = _____$

21) $\frac{56}{72} = \frac{7}{x}, x = _____$

22) $\frac{1}{14} = \frac{x}{42}, x = _____$

23) $\frac{5}{7} = \frac{75}{x}, x = _____$

24) $\frac{30}{48} = \frac{x}{8}, x = _____$

25) $\frac{36}{88} = \frac{9}{x}, x = _____$

26) $\frac{62}{68} = \frac{x}{34}, x = _____$

27) $\frac{42}{60} = \frac{x}{10}, x = _____$

28) $\frac{8}{9} = \frac{x}{108}, x = _____$

29) $\frac{40}{6} = \frac{x}{3}, x = _____$

30) $\frac{88}{121} = \frac{x}{11}, x = _____$

31) $\frac{10}{24} = \frac{x}{48}, x = _____$

32) $\frac{32}{80} = \frac{x}{10}, x = _____$