

Math 7 Accelerated Review

No calculator #1-41

Solve.

1) $5(9 - w) = 10$

2) $-4y - (5y + 6) = -7y + 3$

3) $-\frac{3}{4}x - 2 = -8$

4) $\frac{5}{3}(9 - w) = -10$

Solve for the indicated variable.

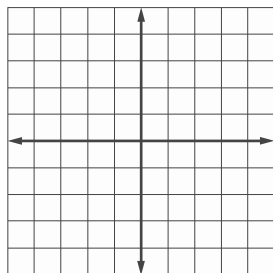
5) $C = 2\pi r$; r

6) $S = B + \frac{1}{2}Pl$; l

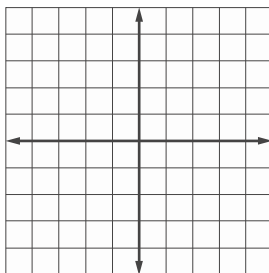
7) Rewrite $3x + 4y = 15 + 6y$ so that y is a function of x .

Use a table of values to graph the equations.

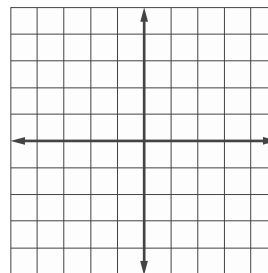
8) $2x + y - 11 = 0$



9) $y = 4$



10) $y = -(5 - x)$



Write the equation of the line in **slope-intercept form** with the given information.

11) $m = 2; b = 1$

12) $m = -4; b = 3$

13) $m = 0; b = 4$

14) $m = 2$; passing through (2, 6)

15) $m = -5$; passing through (3, -9)

16) $m = \frac{1}{2}$; passing through (4, -2)

17) $m = -4$; passing through (1, 8)

18) $m = 0$; passing through (4, 3)

19) $m = \text{undefined}$; passing through (5, 2)

20) passing through (-3, 2) and (4, -1)

21) passing through (6, 2) and (8, -4)

22) passing through (-2, 5) and (2, 4)

23) passing through (9, -1) and (1, -9)

24) Choose all of the expressions equivalent to $-\frac{1}{2}$

a) $\frac{-1}{-2}$

b) $\frac{-1}{2}$

c) $\frac{1}{-2}$

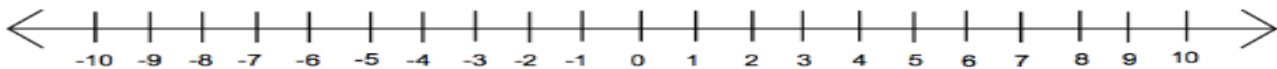
d) $\frac{1}{2}$

25) Identify the integers in the following list of numbers: -2, 5.6, 21, -56 and 0.18

26) Write $\frac{2}{5}$ as a decimal.

27) Write $4\frac{3}{8}$ as a decimal.

28) Put a dot on the number line at the best approximation for the location of $-\sqrt{18}$



Solve.

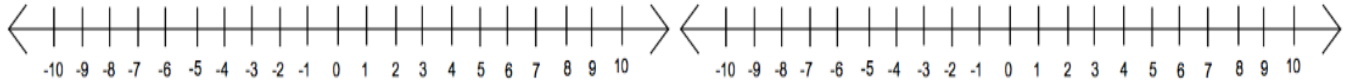
29) $\frac{x}{8} = \frac{x-9}{11}$

30) $\frac{x}{x-4} = \frac{3}{10}$

Solve and graph on the number line.

31) $-21 > 7(r - 10)$

32) $8 < \frac{n}{-6} + 9$



33) $-49 + 7m \leq -105$

34) $11 \geq -\frac{n}{3} + 12$



35) $2x + 7 \geq 13$ or $5x - 4 < 6$

36) $x - 7 < 3x - 5 < x + 11$



Evaluate #37-42 when $x = -5$, $y = \frac{1}{2}$ and $z = 0.4$

37) $-3x + 4$

38) $4z - 3x + xy$

39) $x - y^2$

40) $\frac{x}{y} + z$

41) $z^2 - y - x$

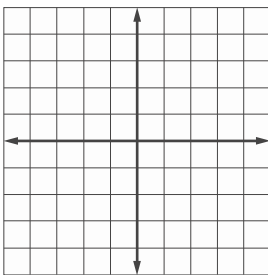
Find the slope of the line passing between the two points.

42) $(3, -4)$ and $(3, -2)$

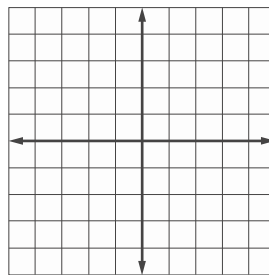
43) $(\frac{3}{2}, -3)$ and $(\frac{1}{2}, -7)$

44) Graph the following lines.

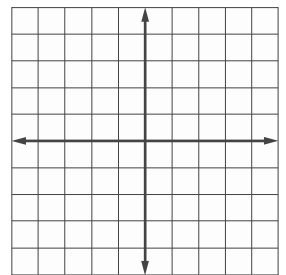
a) $2x + 5y = 15$



b) $3x - y = 4$

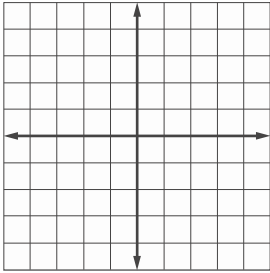


c) $x + \frac{3}{4}y = -6$

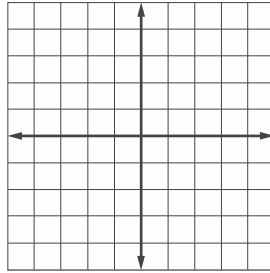


45) Solve each system by graphing.

a) $\frac{1}{2}x + 1 = y$; $y = -\frac{1}{2}x - 3$



b) $-\frac{5}{2}x + 2 = y$; $y = \frac{1}{2}x - 4$



46) Solve each system by Substitution.

a) $y = 2x + 13$; $2x + 4y = -8$

b) $y = -4x$; $6x + 4y = 20$

47) Solve each system by Elimination.

a) $x + 3y = 2$; $-2x - 2y = -12$

b) $x - y = 4$; $2x + \frac{1}{2}y = 4$

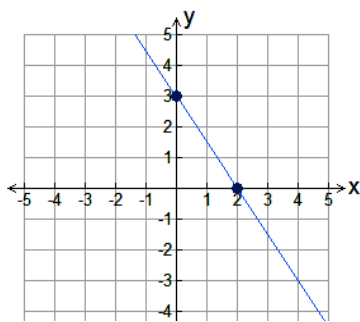
48) Write the equation of the line satisfying the following:

a) through $(-2, -4)$, parallel to $y = -\frac{4}{3}x - 3$

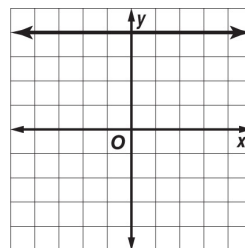
b) through $(-2, 1)$, parallel to $y = x + 4$

49) Write the equation of the lines shown.

a)



b)



Simplify.

50) $8(1 - 9a) - 4(3a - 8)$

51) $10(k^2 + 3) + 4(-7 - 5k^2)$

52) $(4x^3 + 13 - 14x^2) - (12x^3 + 10 + 6x^2)$

53) $(-3m^4 + 5m^2 - 8m) + (2m^2 - 4m^4 + 5m)$

54) $(3v + 5) + (v + 7)$

55) $3r - 6 - (-6r) + 8$

56) $(-5x - 8) + (7x + 6)$

57) $x^2 - 4 - x^2 + 4$

58) $(-8p^2 - 4p + 7) + (3p^2 + p - 1)$

Solve for the given variable.

59) $S = \frac{v}{r}$; for r

60) $P = 2(L + W)$; for W

61) $A = P + Prt$; for t

Solve and graph on the number lines below.

62) $-5(5n + 1) - 9n < -6(3n + 3)$

63) $11b + 7(9b + 2) \leq -8(1 - 12b)$



Find the GCF of the expressions.

64) $-100x^4y^6 + 20x^3y^3 + 70x^2y^3$

65) $80 - 40u^5 + 24uv^3$

66) $27x^5y^2 - 12x^5 + 15y^4$

67) $-8x^2 + 4x - 16$

Solve each system using your method of choice.

$$\begin{aligned} 68) \quad y &= 5x + 13 \\ 2y - 24 &= 10x \end{aligned}$$

$$\begin{aligned} 69) \quad -24x + 9y &= 12 \\ 8x - 3y &= -4 \end{aligned}$$

$$\begin{aligned} 70) \quad 17x - 3y &= 5 \\ y - 1 &= 3x \end{aligned}$$

71) What number is 21% of 450?

72) 21 out of 25 is what percent?

73) Find 45% of 360.

74) 441 is 63% of what number?

75) A student's score was 80% on a math test that had 20 problems. If all of the problems on the test were worth the same number of points, how many problems did the student answer correctly?

76) A metal bar weighs 8.15 ounces. 90% of the bar is silver. How many ounces of silver are in the bar?

77) Gabriel found a Corvette. He bought the car for 65% of the original price of \$7200. What did he pay for the car?

78) Kayla paid \$42 for lunch. If she wants to leave a 20% tip for her server, how much will she pay in total?

Solve.

79) $2x = 21 - x$

80) $\frac{1}{4}p = 6 - \frac{1}{2}p$

81) $5y = 6(3 - y) - (4y - 7)$

82) $-4(-5n + 1) = 116$

83) $-x - 5(x + 8) = -42$

84) $8 + 8k = -2(-2k + 5) + 7k$

85) Express 40% as a fraction in simplest form.

86) Express 83% as a decimal.

87) Express 0.07% as a decimal.

88) Express 0.08 as a percent.

Solve each proportion.

89) $\frac{x}{9} = \frac{7}{14}$

90) $\frac{3}{x} = \frac{7}{10}$

91) $-\frac{x}{8} = \frac{x-9}{11}$

92) Which size can of green beans shown in the table has the lowest unit price?

- A. 6 oz C. 10 oz
B. 8 oz D. 32 oz

Size (oz)	Cost (\$)
6	0.89
8	1.04
10	1.69
32	4.79

93) If it takes 15 gallons of gas to drive 330 miles, how many miles can be driven using 20 gallons of gas?

94) Sanjay can travel 342 miles in 6 hours. At this rate, how far can he travel in 5 hours?

95) Patty can make 10 purses in 8 hours. At this rate, how many purses can she make in 28 hours?

96) If the regular price of a new T-shirt is \$13.95 and the sale price is \$10.00, find the percent of decrease to the nearest whole percent.

97) 480 people attended the fall concert. 350 people attended the spring concert. What is the percent of change from the fall to the spring? Round to the nearest whole percent.

98) The price of a dozen cookies at a bake sale last year was \$2. This year the price for a dozen of cookies was \$5. What is the percent of change?

99) Kelsey read 75% of the 40 books she bought. How many books has Kelsey completed?

100) Determine the total cost of:

a) \$14.95 dinner with a 15% tip.

b) \$27.99 shoes with $7\frac{1}{2}\%$ tax

c) \$16.99 cap with a 20% discount

d) \$25.00 game ticket with a 5.5% tax

101) Use the Distributive property to rewrite each expression. Then simplify.

a) $(9 - p)^3$

b) $(5y - 3)7x$

c) $15(f + 1 - 3g)$

d) $16b(3b - 0.25)$

102) Simplify each expression.

a) $w + 14w - 6w$

b) $-3(5 - 6h)$

c) $12b^2 + 9b^2$

d) $3a^2 + 6a^2 + 2b^2$

e) $4(6p + 2q - 2p)$

103) Write the following in order from **least to greatest**: 0.44, $\frac{3}{8}$, 0.5, $\frac{2}{5}$

104) Write the following in order from **least to greatest**: -0.45 , $\frac{4}{9}$, $-\frac{1}{2}$, 0.375

105) Express 2.2 as a percent.

106) Express 236% as a mixed number in simplest form.

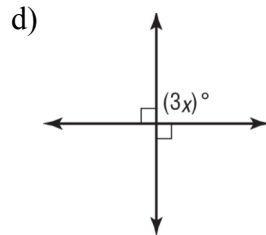
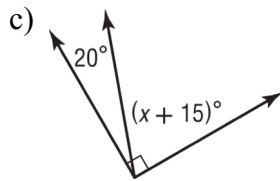
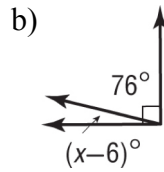
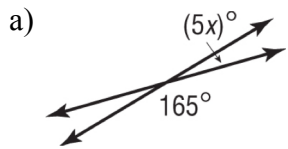
107) Estimate 5% of 59.

108) Estimate 33% of 119.

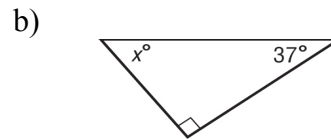
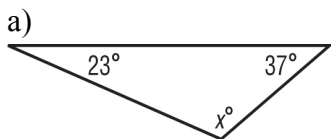
109) What number is 60% of 80?

110) What number is 65% of 300?

111) Find the value of x in each figure.



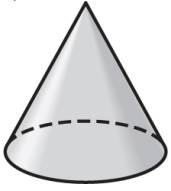
112) Find the missing angle measure in each triangle. Then classify the triangle as *acute*, *right*, or *obtuse*.



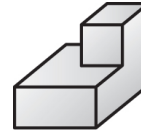
113) A model of a building is made using a scale of 1 inch = 25 feet. What is the height of the actual building if the height of the model is 12.5 inches?

114) Draw a top, a side and a front view of each solid.

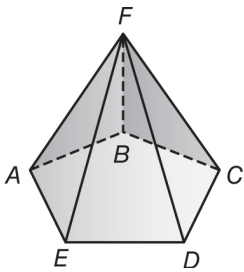
a)



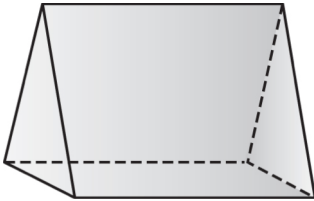
b)



115) Identify the figure below. List the number of faces: ____, bases: ____, edges: ____, vertices: ____



116) Describe the shape that would result from a horizontal slice of the figure below.



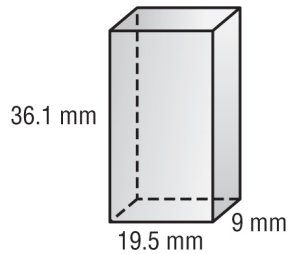
117) Which expression has the greatest value?

- A. $-|-13|$ B. $|-1|$ C. $-|-22|$ D. $|20|$

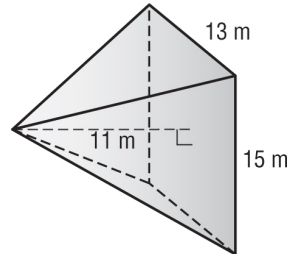
You may use a calculator and will need the MCAS reference sheet for #118-127:
<http://www.doe.mass.edu/mcas/tdd/resources/2018-g8-math-refsheet.pdf>

118) Find the volume of each figure. Round to the nearest tenth, if necessary.

a)



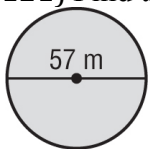
b)



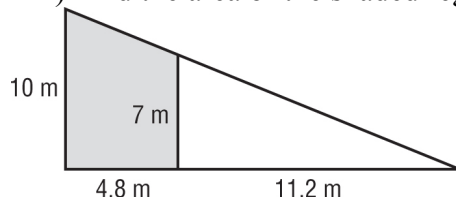
119) A storage shed with a flat roof is 4 yards long by 3 yards wide by $1\frac{1}{2}$ yards tall. A cubic yard is equal to 27 cubic feet. How many cubic feet of storage space does the shed enclose?

120) What is the circumference of a Ferris wheel with a radius of 22.5 ft? Use 3.14 for π .

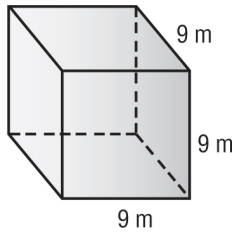
121) Find the area of the circle. Use 3.14 for π .



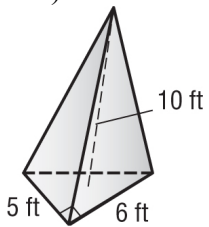
122) Find the area of the shaded region.



123) Find the surface area of the cube.



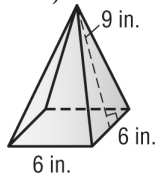
124) Find the volume of the pyramid.



125) A freezer is shaped like a rectangular prism. It has a length of 8 feet and a height of 3 feet. The volume is 54 cubic feet. Find the width of the freezer.

126) A rectangular pyramid has a volume of 210 cubic centimeters. Find two possible sets of measurements for the base area and height of the pyramid.

127) Find the surface area of the pyramid.



128) Drew spun a spinner with 5 equal sections 75 times. Each section of the spinner was a different color. One of the colors was blue. The outcome of “blue” occurred 30 times. Compare the theoretical to the experimental probability of spinning blue.

Experimental Probability: _____ Theoretical Probability: _____

129) Employees at a company are given a three digit employee identification code. If each digit cannot be repeated, how many different codes are possible?

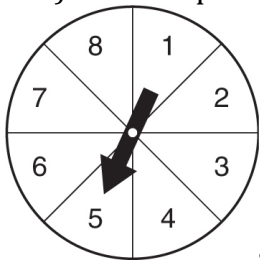
130) For the scenarios below, find the total number of outcomes in each sample space:

- a) buying bedroom furniture if you can select one each from 7 dressers, 4 beds, 6 lamps, and 9 night tables

- b) tossing a dime, a quarter, a penny, a nickel, **and** rolling a number cube

131) How many ways can 4 friends sit together at the movies in 4 seats?

132) Use the spinner to determine each probability.



a) $P(\text{even number})$

b) $P(2 \text{ or } 3)$

c) $P(\text{not } 4)$

d) $P(\text{prime})$

133) A bag contains 4 white beads, 6 red beads, 5 yellow beads, and 5 blue beads. One bead is selected, **kept**, and another bead is selected.

- a) Find $P(\text{blue, then blue})$ b) Find $P(\text{white, then red})$

134) If Bailey rolled a number cube 90 times, how many times would you expect her to roll a 2?

135) There are 100 prize tickets in a bowl, numbered 1 to 100. What is the probability that an even numbered prize ticket will be chosen at random, **not replaced**, then an odd numbered prize ticket will be chosen? Does this represent an independent or dependent event?

136) A survey found that 3 out of 7 people in a community jog on a regular basis. If there are 3,150 people in the community, what is a reasonable prediction for the number of people who would jog regularly?

- F. 1,050 H. 1,575
G. 1,350 I. 1,800

137) A survey found that 2 out of 8 students **do not** own a pet. If there are 480 students in a school, what is a reasonable prediction for the number of students **who own** a pet?

- A. 360 C. 36
B. 120 D. 12

138) The number of toys donated by students in 12 classes is shown below. The principal says the average number of toys donated by each class is 26. Explain how this could be misleading.

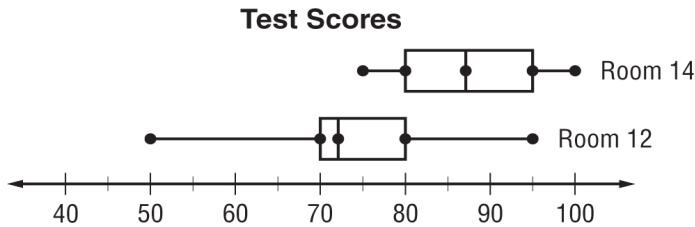
16, 16, 17, 19, 20, 23, 24, 25, 29, 31, 33, 59

139) To determine what park visitors like, every tenth visitor is surveyed at the park entrance. Out of 180 visitors, 22% said they would like to have more walking paths. The park manager concludes that about one-fifth of all park visitors would like to have more walking paths. Is this conclusion valid? Justify your answer.

140) Using the box plot below, determine:

a) Which class had a greater range of scores? _____

b) What is the median score for each room? _____



141) Find the mean, median, and mode of the data.

Number of Students			
10	12	15	73
13	20	12	16
15	25	9	

142) A survey at Pollard showed that 2 out of 9 students help cook meals at home. Predict how many out of the 774 students in the school help cook meals at home.

143) Ekoia wants to know if her neighbors want to hold a neighborhood garage sale. She walks through the neighborhood and asks the people she sees. Because three of the 10 people she saw said *yes*, she concludes that 30% of the people in her town will want to hold a garage sale. Is this conclusion valid? Justify your answer.

144) Graph the lines in the coordinate grid below. Be sure to label your lines with the appropriate equations.

a) $y = 3x + 1$

b) $y = -x - 2$

c) $y = \frac{1}{3}x + 4$

d) $x = 4$

e) $x + y = 0$

f) $2x - 3y = -9$

Solve.

145) Daniel's school is selling tickets to a spring musical. On the first day of ticket sales, the school sold one senior citizen ticket and twelve child tickets for a total of \$106. The school took in \$224 on the second day by selling 12 senior citizen tickets and 13 child tickets. Find the price of a senior citizen ticket and the price of a child ticket.

