

7th Grade Summer Packet

Date _____ Period _____

Solve each equation.

1) $-6b - 4(3b - 2) = 152$

2) $7(5p + 1) = -98$

3) $-8(2 - 2r) = -144$

4) $-7(a - 5) = 91$

5) $-3k - 7(k + 8) = -86$

6) $154 = 7(4 - 3m)$

7) $-8(-2 + 8n) + 1 = 81$

8) $8(3 - 5x) = -96$

9) $95 = 6r + 7(r + 8)$

10) $190 = 4(2 - 5a) - 6a$

11) $\frac{14}{5}\left(-\frac{7}{2}b - \frac{1}{2}\right) = \frac{623}{10}$

12) $\frac{10}{3}\left(\frac{17}{5}x + \frac{7}{4}\right) - \frac{1}{2} = 62$

13) $-78 = -4\left(\frac{16}{5}k + \frac{7}{2}\right)$

14) $-\frac{14}{5}\left(-5a + \frac{7}{4}\right) - \frac{19}{5} = -\frac{411}{5}$

15) $\frac{19}{6}\left(4v + \frac{18}{5}\right) = -\frac{323}{5}$

16) $\frac{485}{6} = 5\left(2r + \frac{5}{2}\right)$

17) $5\left(3k + \frac{3}{2}\right) = \frac{123}{2}$

18) $-\frac{247}{3} = 6\left(-\frac{8}{3}k - \frac{7}{2}\right)$

19) $6\left(\frac{18}{5}n + 1\right) = -\frac{384}{5}$

20) $6\left(-\frac{7}{2}n + \frac{1}{2}\right) + \frac{5}{2} = \frac{253}{4}$

$$21) -66 = -(v - 1) - 4(-8 + 8v)$$

$$22) 80 = 6(-x + 5) + 2(1 - 3x)$$

$$23) 30 = 6(1 - x) - 3(x - 2)$$

$$24) 8(n + 4) - 4(7 + 6n) = 20$$

$$25) 2 = 5(6p - 8) + 4(p + 2)$$

$$26) 8(2n - 5) + 7(4 - 7n) = 54$$

$$27) 69 = -3(8a - 2) + 3(-1 - 3a)$$

$$28) 40 = 8(-v + 6) + 3(v - 6)$$

$$29) 6(a + 8) + 7(8 + 2a) = 24$$

$$30) -57 = -3(4 + 5x) + 8(x - 3)$$

Solve each proportion.

$$31) -\frac{5}{3} = \frac{2}{b}$$

$$32) \frac{3}{b} = \frac{5}{10}$$

$$33) \frac{4}{n} = -\frac{5}{10}$$

$$34) \frac{9}{10} = -\frac{2}{x}$$

$$35) -\frac{3}{6} = \frac{n}{9}$$

$$36) \frac{3}{9} = \frac{r}{4}$$

$$37) \frac{5}{p} = -\frac{8}{6}$$

$$38) \frac{7}{n} = -\frac{10}{7}$$

$$39) \frac{x + 3}{8} = \frac{4}{5}$$

$$40) -\frac{7}{3} = \frac{k + 3}{10}$$

$$41) \frac{4}{x - 6} = \frac{8}{5}$$

$$42) \frac{2}{6} = \frac{6}{p - 6}$$

$$43) -\frac{7}{v+3} = \frac{2}{6}$$

$$44) \frac{k+1}{2} = \frac{6}{5}$$

$$45) \frac{8}{9} = \frac{r-2}{2}$$

$$46) \frac{2}{5} = \frac{5}{n-6}$$

$$47) -\frac{x}{8} = \frac{x+6}{2}$$

$$48) \frac{7}{8} = -\frac{m}{m-4}$$

$$49) -\frac{9}{m} = \frac{10}{m-6}$$

$$50) -\frac{8}{x} = \frac{6}{x-8}$$

$$51) \frac{10}{v-10} = -\frac{6}{v}$$

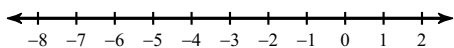
$$52) \frac{3}{6} = \frac{m}{m+9}$$

$$53) \frac{x}{5} = \frac{x-2}{7}$$

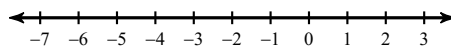
$$54) \frac{x}{x-5} = \frac{10}{4}$$

Solve each inequality and graph its solution.

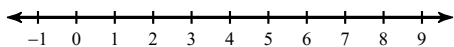
$$55) 4(7x - 1) > -144$$



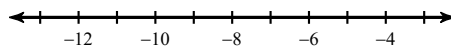
$$56) 104 \geq -4(7x + 2)$$



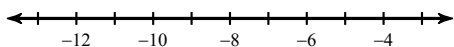
$$57) 8(v + 7) \geq 96$$



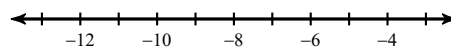
$$58) 6(6 + 5v) \geq -114$$



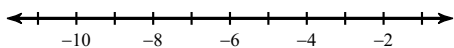
$$59) 234 \geq -8(5r + 6) - 7r$$



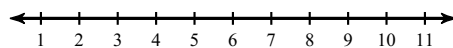
$$60) 90 < -2(2x - 3) - 8x$$



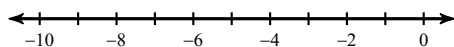
$$61) -104 \leq 8(1 + 3x) - 8x$$



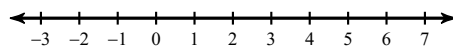
$$62) 100 \geq -3(1 - 4p) + 7$$



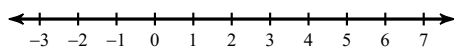
$$63) 17 - 6m < -(8m - 1)$$



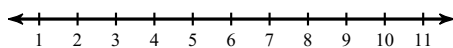
$$64) -3 - 4(3n - 4) \geq -39 + n$$



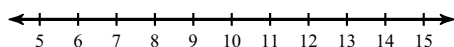
$$65) x - 5(5x - 8) > -36 - 5x$$



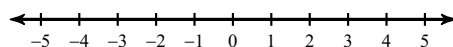
$$66) -24 - 2m > -2(2m + 7)$$



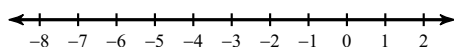
$$67) 39 - 6n > -3(n - 7) - 3$$



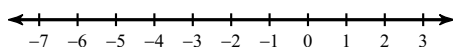
$$68) 4(x + 7) < 6 - 7x$$



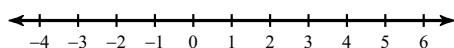
$$69) 4p < 2(p - 6)$$



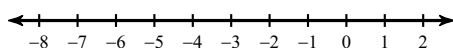
$$70) -14 + 7n < -7(-5n + 2)$$



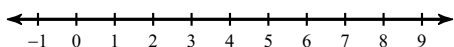
$$71) -4(6v + 8) \geq 4(v - 1)$$



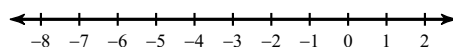
$$72) 1 - 5(6p - 4) \leq 7(2p + 3)$$



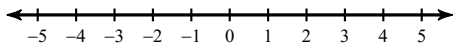
$$73) 3(3 - 4x) + 7x \leq 3(x - 5) + 4x$$



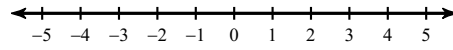
$$74) 2(7k + 1) \geq 7k + 2(6k + 1)$$



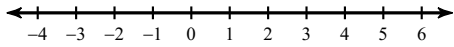
$$75) -(7 + 4p) - 2(6p + 7) > -3p + 8p$$



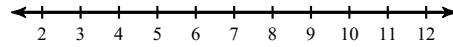
$$76) 8(a - 4) \geq -4(-2a - 7) + 5$$



$$77) 3(2 + 7x) > -3(2 - 8x)$$

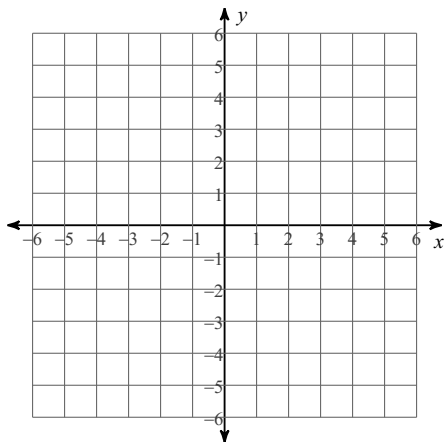


$$78) -6n + 2n \leq 4(-7n - 8) - 8(1 - 4n)$$

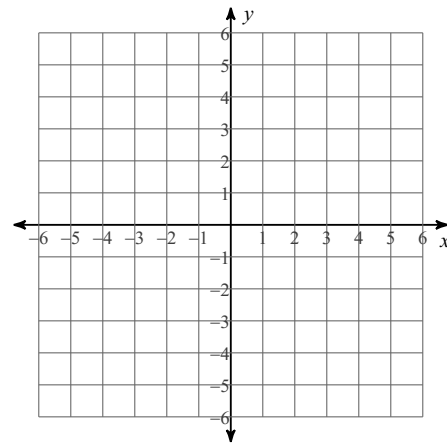


Sketch the graph of each line.

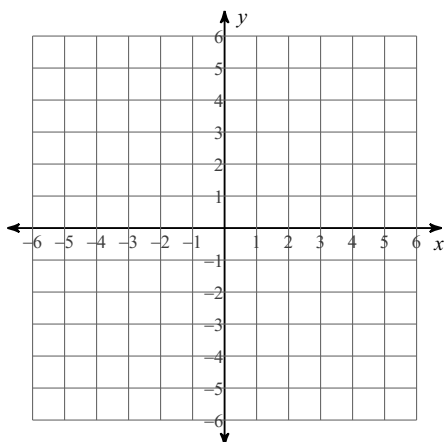
$$79) x = 2$$



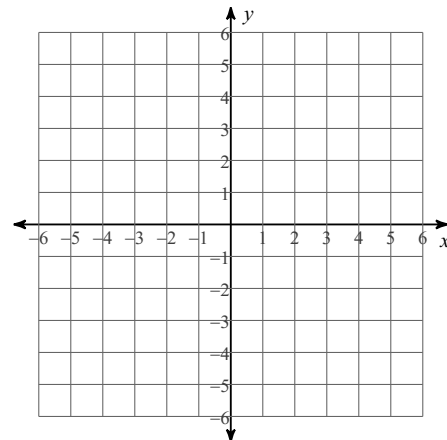
$$80) y = \frac{7}{3}x + 4$$



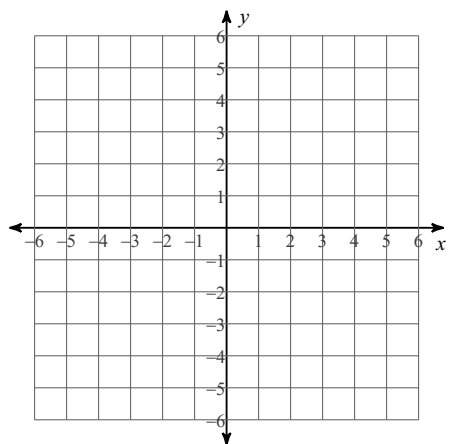
$$81) y = \frac{4}{3}x - 1$$



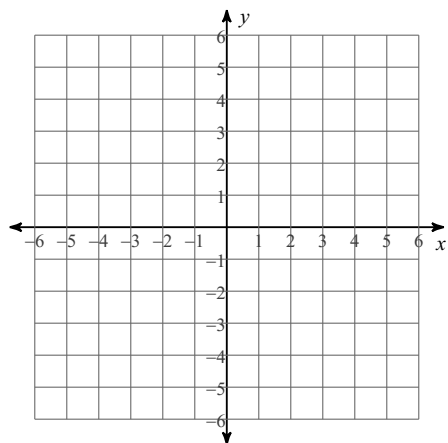
$$82) y = -3x - 3$$



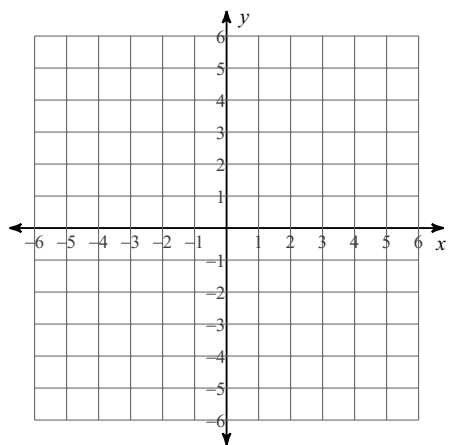
83) $y = \frac{5}{2}x - 5$



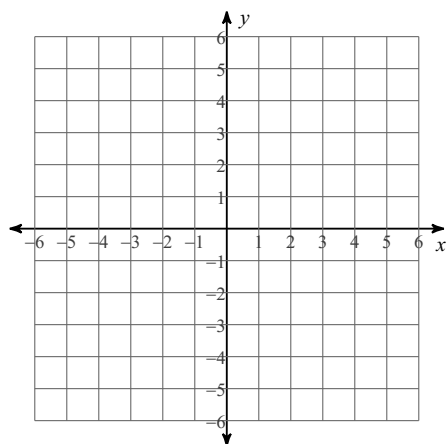
84) $y = 3x + 5$



85) $y = -1$

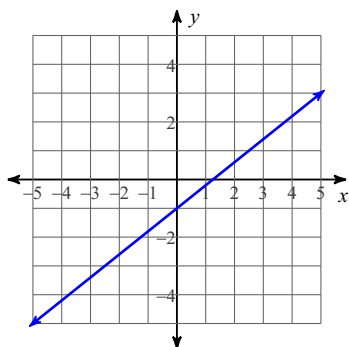


86) $y = -\frac{1}{2}x - 5$

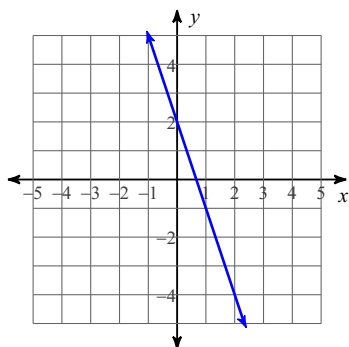


Write the slope-intercept form of the equation of each line.

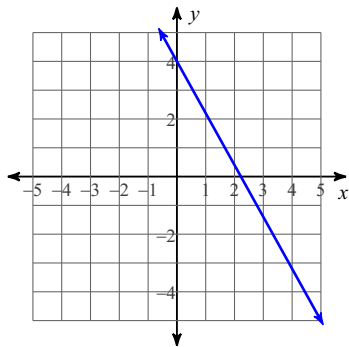
87)



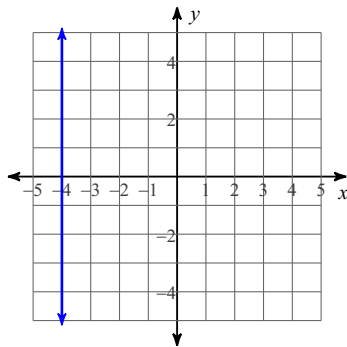
88)



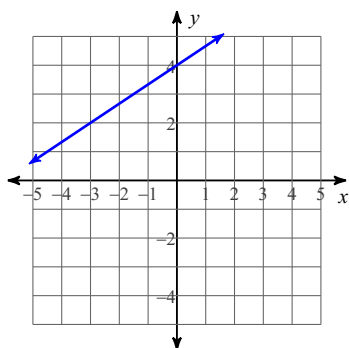
89)



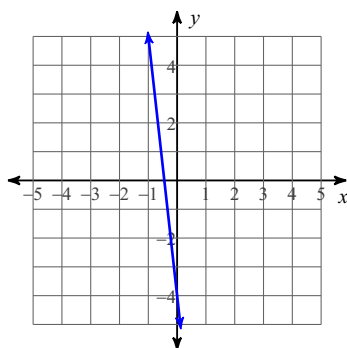
90)



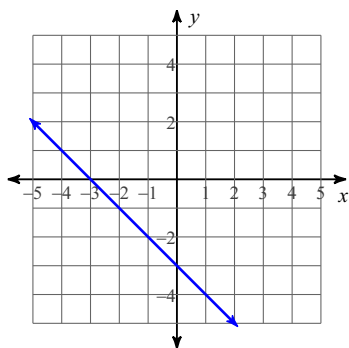
91)



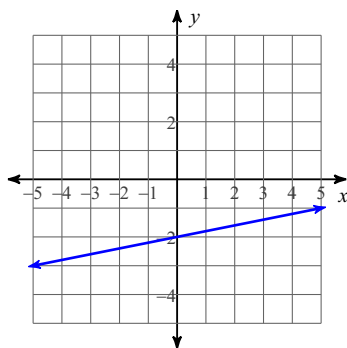
92)



93)



94)



Write the slope-intercept form of the equation of each line given the slope and y-intercept.

95) Slope = -5 , y-intercept = 1 96) Slope = 10 , y-intercept = -5 97) Slope = 8 , y-intercept = 4 98) Slope = $\frac{1}{4}$, y-intercept = 3

99) Slope = -2 , y-intercept = 5

100) Slope = -2 , y-intercept = -2

101) Slope = $\frac{3}{5}$, y-intercept = 1

102) Slope = $-\frac{7}{3}$, y-intercept = -4

Write the slope-intercept form of the equation of the line through the given point with the given slope.

103) through: $(-2, -1)$, slope = $-\frac{3}{2}$

104) through: $(-3, -4)$, slope = $\frac{1}{3}$

105) through: $(1, 5)$, slope = 2

106) through: $(5, -1)$, slope = $-\frac{2}{5}$

107) through: $(-1, -1)$, slope = 0

108) through: $(1, 1)$, slope = 0

109) through: $(-2, 4)$, slope = -4

110) through: $(-3, 5)$, slope = 0

Write the slope-intercept form of the equation of the line through the given points.

111) through: $(-4, -5)$ and $(0, 0)$

112) through: $(-4, -4)$ and $(0, 2)$

113) through: $(-4, -1)$ and $(0, -4)$

114) through: $(-2, -4)$ and $(2, -1)$

115) through: $(0, 2)$ and $(-3, -2)$

116) through: $(4, 1)$ and $(0, 0)$

117) through: $(-1, -3)$ and $(3, 0)$

118) through: $(0, -1)$ and $(4, 5)$

Write the slope-intercept form of the equation of the line described.

119) through: $(-3, -1)$, parallel to $y = -\frac{1}{3}x - 3$

120) through: $(3, 2)$, parallel to $y = -\frac{2}{7}x$

121) through: $(4, 4)$, parallel to $y = \frac{7}{4}x - 1$

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

123) through: $(1, 4)$, parallel to $y = 6x - 4$

124) through: $(-5, 0)$, parallel to $y = -\frac{2}{5}x + 3$

125) through: $(-1, 1)$, parallel to $y = -2$

126) through: $(-5, -3)$, parallel to $y = \frac{5}{6}x - 5$

127) through: $(-5, 4)$, perp. to $x = 0$

128) through: $(-5, 5)$, perp. to $y = \frac{5}{2}x - 5$

129) through: $(2, -1)$, perp. to $y = x - 3$

130) through: $(2, -4)$, perp. to $y = \frac{3}{4}x - 2$

131) through: $(-1, 3)$, perp. to $y = \frac{1}{7}x + 3$

132) through: $(-2, -5)$, perp. to $y = -x + 1$

133) through: $(2, -4)$, perp. to $y = 3x + 4$

134) through: $(5, -4)$, perp. to $y = \frac{5}{3}x + 5$

Find each percent change. State if it is an increase or a decrease.

135) From 89 inches to 51 inches

136) From 86 minutes to 40 minutes

137) From 48 grams to 12 grams

138) From 56 grams to 21 grams

139) From 6 hours to 14 hours

140) From 65 minutes to 31 minutes

141) From \$17 to \$35

142) From \$84 to \$41

Solve each problem.

143) 23% of 66 is what?

144) 91% of 150 is what?

145) 35% of what is 34?

146) What percent of 49 is 19?

147) 79% of 121 is what?

148) What percent of 108.7 is 9?

149) What is 67% of 18?

150) What percent of 126 is 122?

151) 100 is 32% of what?

152) What is 187% of 29?

153) 51% of what is 147?

154) 5 is what percent of 93?

155) What is 53% of 158?

156) 76% of 7 is what?

157) 75% of 50 is what?

158) 166% of what is 72?

159) 340% of 157 is what?

160) 37% of what is 33?

161) What is 6% of 59?

162) 137.2 is 250% of what?