

Algebra 2 / Trigonometry
Chapter 1

Name Kelly

Geometry Review:

- 1.) Find the length of the third side of a right triangle if the lengths of the two legs are 6 inches and 2 inches.

$$6^2 + 2^2 = 40$$

1.) $2\sqrt{10}$

- 2.) Find the distance of the line segment with endpoints (3, -2) and (-2, 5).

$$d = \sqrt{(-2-3)^2 + (5+2)^2}$$

2.) $\sqrt{74}$

- 3.) Find the midpoint of the segment with endpoints (3, -2) and (-2, 5).

$$\left(\frac{3-2}{2}, \frac{-2+5}{2}\right)$$

3.) $\left(\frac{1}{2}, \frac{3}{2}\right)$

Find the value of each expression. (Lesson 1-1)

4.) $5 - 24 \div 12 \cdot 2 + 6$

5.) $\frac{6^2 + 4 \cdot 2^4}{28 + 9 \cdot 8}$

4.) 7

6.) $7(8-3) - 3^3$

7.) $[7 - (8 - 6)^2] - 1$

5.) 1

6.) 8

7.) 2

For #8-9, Evaluate if $a = 2$, $b = -3$, $c = -1$, $d = 2$

8.) $\frac{3ab^2 - d^3}{a}$

9.) $\frac{5ab^2 - c^3}{a^2}$

8.) 23

9.) $\frac{91}{4}$

10.) Simplify: $\frac{4}{5}(3v - 2w) - \frac{1}{5}(7v - 2w)$

$$\frac{12}{5}v - \frac{8}{5}w - \frac{7}{5}v + \frac{2}{5}w$$

10.) $v - \frac{6}{5}w$

Name the property illustrated in each equation. (Lesson 1-2)

11.) $5(x-6) = 5x - 30$

12.) $5 + (x+3) = 5 + (3+x)$

11.) Dist.

12.) Comm

13.) $2x(4+3y) = (4+3y)2x$

14.) $8d \cdot 1 = 8d$

13.) Com

14.) Iden

Name ALL the sets that each number belong to (Lesson 1-2)

(Use R = reals, I = irrational, W = wholes, Q = rationals, Z = integers, and N = naturals)

15.) -6

Z, Q, R

16.) $\sqrt{13}$

I, R

17.) $\frac{3}{4}$

Q, R

Solve each open sentence. (Lessons 1-4 through 1-6)

18.) $4(y+1)+7=y+17$

$$4y + 11 = y + 17$$

$$3y = 6$$

19.) $\frac{3x+3}{4} = \frac{5}{2}$

$$6x + 6 = 20$$

$$6x = 14$$

18.) $\frac{2}{7/3}$

19.) $\frac{7}{3}$

20.) $2(2x-3)=8-3(3x+1)$

$$4x - 6 = 8 - 9x - 3$$

$$13x = 11$$

21.) $|3x+6|+3=45$

$$|3x+6| = 42$$

$$3x+6 = -42 \text{ or } 3x+6 = 42$$

20.) $\frac{11}{13}$

21.) $-\frac{11}{13}$ or $\frac{12}{13}$

22.) $2|y+4|=14$

$$|y+4| = 7$$

$$y+4 = -7 \text{ or } y+4 = 7$$

23.) $|8+x|=2x-3$

$$8+x = -2x+3 \text{ or}$$

$$8+x = 2x-3$$

$$3x = -5$$

$$-x = -11$$

22.) -11 or 3

23.) $-\frac{5}{3}$ or 11

24.) $5(x-1)-4x \geq 3(3-x)$

$$5x - 5 - 4x \geq 9 - 3x$$

$$4x \geq 14$$

25.) $\frac{2x+3}{5} < 0.03$

$$2x+3 < 0.15$$

24.) $x \geq \frac{7}{2}$

25.) $x < -1.425$

26.) Write an algebraic expression to represent the following verbal expression:
The product of the cube of a number and seven (Lesson 1-4)

26.) $(x^3)7$ or $7x^3$

27.) Write an equation, but do not solve: (Lesson 1-4)
Seventeen less than the product of four and a number squared is negative one

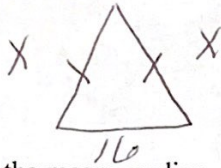
27.) $4x^2 - 17 = -1$

28.) The sum of three consecutive odd integers is 195.
Write an equation to find the integers, then solve. (Lesson 1-4)

28.) $63, 65, 67$

$$\left. \begin{array}{l} x \\ x+2 \\ x+4 \end{array} \right\} = 3x+6 = 195$$

- 29.) The perimeter of an isosceles triangle is 62 cm. Find the lengths of the sides if the length of the base is 16 cm. (Lesson 1-4)



$$2x + 16 = 62$$

29.) 23

- 30.) State the mean, median, and mode for the following data: {26, 18, 11, 25, 26, 19, 35, 29, 25, 16, 26} (Lesson 1-3)

mean = 23.27
 30.) med = 25
 mode = 26

Solve each inequality and graph each set of solutions. (Lesson 1-6)

31.) $-16 < 4y + 2 \leq 30$

$$-18 < 4y \leq 28$$

$$-\frac{9}{2} < y \leq 7$$

32.) $2x + 7 < -13$ or $6 - 2x < 10$

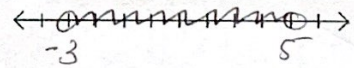
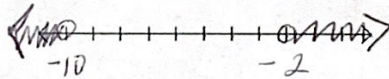
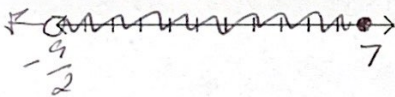
$$2x < -20 \text{ or } -2x < 4$$

$$x < -10 \text{ or } x > -2$$

33.) $3x + 2 > -7$ and $2x + 8 < 18$

$$3x > -9 \text{ and } 2x < 10$$

$$x > -3 \text{ and } x < 5$$



Solve each inequality and graph each set of solutions. (Lesson 1-6 and 1-7)

34.) $|x + 5| < 8$

$$x + 5 < 8 \text{ and } x + 5 > -8$$

$$-13 < x < 3$$

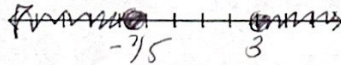
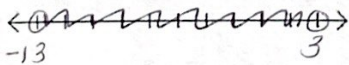
35.) $|5x - 4| \geq 11$

$$5x - 4 \leq -11 \text{ or } 5x - 4 \geq 11$$

$$5x \leq -7 \text{ or } 5x \geq 15$$

34.) $-13 < x < 3$

35.) $x \leq -7/5$ or $x \geq 3$



36.) $6x - 4 > 9x + 2$

$$-3x > 6$$

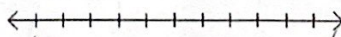
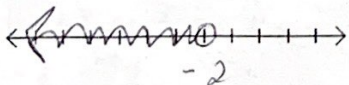
$$x < -2$$

37.) $|7x - 8| < -5$

abs. value
 can not
 be less than
 a neg. number

36.) $x < -2$

37.) \emptyset



Algebra 2 / Trigonometry
Chapter 2

Name Key

State the domain and range of each relation. Then state if it is a function. (Lesson 2-1)

1.) $\{(3,5), (4,2), (-2,6), (4,7)\}$

D: $\{-2, 3, 4\}$

R: $\{2, 5, 6, 7\}$

no

2.) $\{(1,5), (-4,3), (-2,2), (3,5)\}$

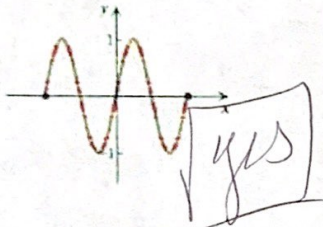
D: $\{-4, -2, 1, 3\}$

R: $\{2, 3, 5\}$

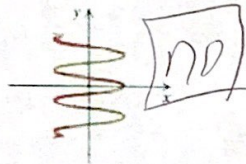
yes

3.) Use the vertical line test to determine if the relation is a function, answer yes or no. (Lesson 2-1)

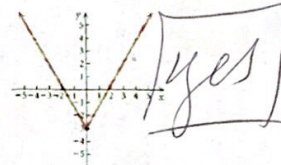
a.)



b.)



c.)



4.) Given $f(x) = 5x + 2x^2 + 1$, find $f(-3)$. (Lesson 2-1)

$$f(-3) = 5(-3) + 2(-3)^2 + 1 = 4$$

Find the slope, x-intercept, and y-intercept of each line whose equation is given below. (Lesson 2-2)

5.) $4x - 3y = 7$

x-int $(\frac{7}{4}, 0)$ $m = \frac{4}{3}$

y-int $(0, -\frac{7}{3})$

6.) $5x + y = 10$

x-int $(2, 0)$

y-int $(0, 10)$

$m = -5$

7.) Find the slope-intercept form of the equation of the line passing through the point $(-4, 7)$ with a slope of -2 . (Lesson 2-4)

$$y - 7 = -2(x + 4)$$

$$y = -2x - 1$$

8.) Find the standard form of the equation of the line whose x-intercept is -2 and whose y-intercept is -3 . (Lesson 2-4)

$$0 = m(-2) - 3$$

$$3 = -2m$$

$$m = -\frac{3}{2}$$

$(-2, 0)$

$$y = -\frac{3}{2}x - 3$$

$$3x + 2y = -6$$

9.) Find the standard form of the equation of the line that passes through $(1, -2)$ and is perpendicular to the line $y = -\frac{1}{4}x + 3$. (Lesson 2-3) $\perp m = 4$

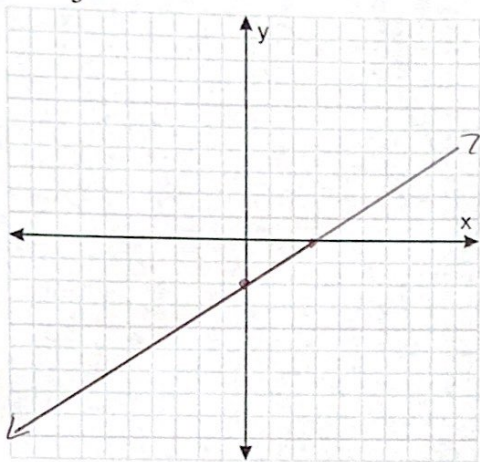
$$y + 2 = 4(x - 1)$$

$$y = 4x - 6$$

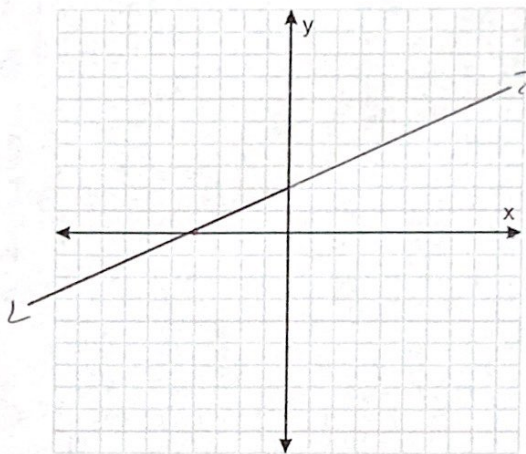
$$4x - y = 6$$

Graph each equation or inequality on the attached graph paper. (Lessons 2-1, 2-3, 2-6, and 2-7)

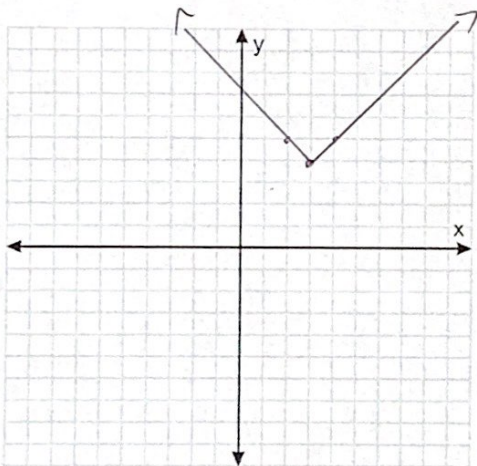
10.) $y = \frac{2}{3}x - 2$



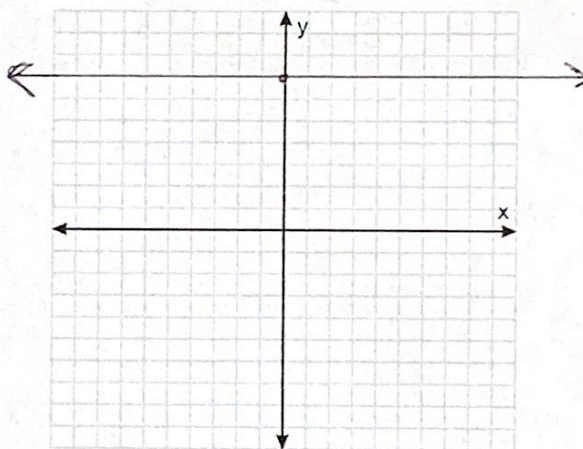
11.) $-x + 2y = 4$



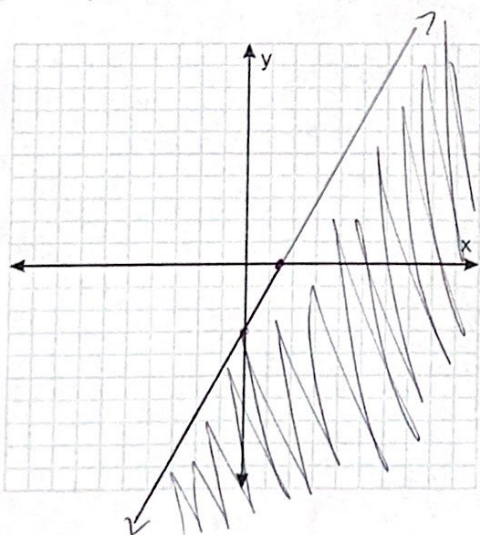
13.) $y = |x - 3| + 4$



14.) $y = 7$



15.) $5x - 2y \geq 6$



16.) $y < |x + 5|$

