**AGLEBRA I**

**1ST SEMESTER**

**FINAL REVIEW**

**This final review contains many of the concepts that we covered during the trimester. It does not have all of them. You are responsible to review all topics covered.**

**CHAPTER 1**

1. Write an algebraic expression for the phrase. 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 The quotient of 5 times *x* and 8

2. Simplify the expression. $2\left[18-\left(-4\right)+7\right]$ 2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. Use <, =, or > to compare.    3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. Evaluate the expression for 4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 $-x+\left(-3y\right)-\left|-2z\right|$

5. Evaluate the expression for 5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 

**For #’s 6-8, simplify the expression.**

6.  6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

7. $-\left(6x-5\right)$ 7. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

8.  8. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**CHAPTER 2**

**For #’s 1 – 6, solve and check.**

1.  1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2.  2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

3.  3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

4.  4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

5.  5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

6.  6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

7. The length of a rectangle is seven inches less than four 7. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

 times the width. The perimeter of the rectangle is 26 inches.

 What are the width and length of the rectangle?

8. Train A leaves a station traveling at 96 kilometers 8. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

 per hour. Two hours later, Train B leaves the same

 station traveling in the same direction at 106 kilometers

 per hour. How long does it take Train B to catch up to Train A?

9. Two travelers were 200 kilometers apart at 2:00 p.m. 9. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

 and were headed toward each other. If they met at 4:30 p.m.,

 and one was traveling 20 kilometers per hour faster than the

 other, what was the speed of each traveler?

10. Mike and Rene walked to a dock at 3 miles per hour, 10. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

 got on a boat, and traveled to Dillion at 7 miles per hour.

 If the total distance was 24 miles, and the trip took  hours

 in all, how far did they go by boat?

11. Kathy and Chris drove a total of 353 miles in 9.2 hours. 11. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Kathy drove the first part of the trip and averaged 35 miles

 per hour. Chris drove the remainder of the trip and averaged

 45 miles per hour. For what length of the time did Kathy drive?

**CHAPTER 3**

1. Graph the inequality.  ** 1.

**For #’s 2 - 5, solve and graph the inequality.**

2.  2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

 3.  3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

4.  4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

5.  or  5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

**For #’s 6 – 8, solve the absolute value equations.**

6.  6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

7.  7. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

8.  8. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

**CHAPTER 4**

**For #’s 1 - 3, find the unit rate.**

1. $60 for 8 hours 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2.  2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3.  3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**For #’s 4 – 7, solve the proportion.**

4.  4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5.  5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6.  6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

7.  7. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**For #’s 8 & 9, each pair of figures is similar. Find the length of *x*.**

8. 8. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 

9. 9. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 

**For #’s 10 – 12, use a proportion to solve.**

10. Δ*ABC* is similar to Δ*XYZ*. The length of *AB* is 10. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

 10. The length of *BC* is 7. Find the length *XY*

 if the length of *YZ* is 14.

11. The blueprint scale is 1 in.: 12 ft. The width of 11. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

 a building is 48 ft. What is the width of the building

 on the blueprint?

12. Angie is using similar triangles to find the height 12. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

 of a tree. A stick that is 5 feet tall casts a shadow

 that is 4 feet long. The tree casts a shadow that is

 22 feet long. How tall is the tree?

**Solve.**

13. 25% of what is 28? 13. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

14. What percent of 12 is 7? 14. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

15. 22.5% of what is 42? 15. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

16. Pablo has a goal to lose 25 lb. He has lost 16 lb. 16. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

 What percent of his goal has he reached?

17. Kiko spends 30% of her monthly income on 17. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

 rent. If she pays $810 for rent each month,

 what is her monthly income?

**For #’s 18 & 19, the formula for determining simple interest is  where *I* is the interest earned, *p* is the principal (starting) amount, *r* is the interest rate, and *t* is the time. Solve the following.**

18. You invest $1500 for three years. Find the 18. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

 amount of simple interest you earn at an

 annual rate of 8.25%.

19. Suppose you invested some money at 8% 19. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

 simple interest for five years. If you received

 $500 in interest, how much money did you invest?

**For #’s 20 – 22, find the percent of change. Round to the nearest whole number if necessary.**

20. 18 to 27 20. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

21. $15 to $5.50 21. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

22. 290 yards to 261 yards 22. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

23. In 1977, the average number of households 23. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

 with cable television was 16.6%. In 2000, the

 average number of households with cable television

 was 68%. Find the percent of change.

**For #’s 24 & 25, find the greatest possible error and the percent error for each measurement.**

24. 6 cm 24. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

25. 36.85 g 25. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

**CHAPTER 5**

1. Find the domain and range of each relation. 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

(-3, -7), (-1, -3), (0, -1), (2, 3), (4, 7)

**For #’s 2 & 3, evaluate each function rule for x = 3.**

2.  2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

3.  3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

**For #’s 4 & 5, find the range of each function for the given domain.**

4.  4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

5.  5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

6. Write a function rule for the table of values. 6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |
| --- | --- |
| ***x*** | ***f(x)*** |
| 0 | 3 |
| 2 | 5 |
| 4 | 7 |
| 6 | 9 |

7 a. Write a function rule to determine the 7a. \_\_\_\_\_\_\_\_\_\_\_\_\_

 change you would get from a $20 bill

 when purchasing items that cost $1.25

 each.

b. Calculate the change when five of 7b. \_\_\_\_\_\_\_\_\_\_\_\_\_

 these items are purchased.

c. Can you purchase 17 of these items 7c. \_\_\_\_\_\_\_\_\_\_\_\_\_

 with a $20 bill?