Solving Inequalities Review

Name _____

Date _____Period_____

Write and solve an inequality for each situation.

1.   Sumiko is allowed to watch no more than 10 hours of television each week. She has watched 4 hours of television already. How many more hours of television Sumiko can watch?

2.   Jillene is playing in a basketball tournament and scored 24 points in her first game. If she averages over 20 points for both games, she will receive a trophy. How many points can Jillene score in the second game and receive a trophy?

3.   Karin has $15 to spend in the arcade. The game she likes costs 1.50¢ per play. What are the possible numbers of times that she can play?

4.   A satellite will be released into an orbit of more than 400 miles above the Earth. The rocket carrying it is currently 255 miles above the Earth. How much higher the rocket must climb before it releases the satellite?

5.   Marcus has accepted a job selling cell phones. He will be paid $1500 plus 15% of his sales each month. He needs to earn at least $2430 to pay his bills. For what amount of sales will Marcus be able to pay his bills?

6.   Tyrone has $21 and wants to buy juice drinks for his soccer team. There are 15 players on his team. How much can each drink cost so that Tyrone can buy one drink for each person?

7. A 22–foot–tall cedar tree is growing at a rate of 3 feet per year beneath power lines that are 62 feet above the ground. The power company will have to prune or remove the tree before it reaches the lines. How many years can the power company wait before taking action?

8. A swimming pool is 7 feet deep and is being filled at a rate of 2.5 feet per hour. How long can the pool be left unattended without the water overflowing?

9. Megan is making quilts that require 11 feet of cloth each. She has 50 feet of cloth. What are the possible numbers of quilts that she can make?

10. Georgia brought $35 with her to the county fair. She purchased a $15 T–shirt and now wants to buy some locally grown plants for $5.85 each. What are the numbers of plants that she can purchase with her remaining money?

11. Wayne's homework is to solve at least 20 questions from his textbook. So far, he has completed 9 of them. Write, solve, and graph an inequality to show how many more problems Wayne must complete.
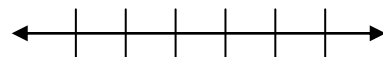
12. Felix wants to get at least one hour of exercise each day. Today, he has run 40 minutes. Write, solve, and graph an inequality that shows how much longer Felix needs to exercise to reach his goal.
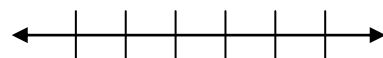
The high school has been raising money for charity and the class that raises the most will be awarded a part at the end of the year. The table below shows how much money each class has raised so far. Use this to answer questions 13-15.

13. The school has a goal of raising at least $3000. Which inequality shows how much more money m they need to raise to reach their goal?

Class	Amount Raised ($)
Seniors	870
Juniors	650
Sophomores	675
First–Years	590

    a. $m \geq 215$
    b. $m < 215$
    c. $m > 215$
    d. $m \leq 278$

14. The juniors would like to raise more money than the seniors. The seniors have completed their fundraising for the year. Which expression shows how much more money j the juniors must raise to overtake the seniors?

    a. $j \leq 220$
    b. $j < 220$
    c. $j \geq 220$
    d. $j > 220$

15. A local business has agreed to donate no more than half as much as the senior class raises. Which inequality shows how much money b the business will contribute?

    a. $\frac{1}{2}(870) \leq b$
    b. $(870) \leq \frac{1}{2}b$
    c. $\frac{1}{2}(870) \geq b$
    d. $(870) \geq \frac{1}{2}b$

Benedict, Ricardo, and Charlie are considering opportunities for summer work. The table below shows the jobs open to them and the pay for each. Use this information to answer questions 16–18.

16. Benedict has saved $91 from last year and would like to baby–sit to earn enough to buy a mountain bike. A good quality bike costs at least $300. What number of hours h can Benedict baby–sit to reach his goal?

Job	Pay
Mowing Lawns	$15 per lawn
Baby-Sitting	$5.50 per hour
Tutoring	$9 per session

a. $h \geq 14$
b. $h \geq 23$
c. $h \geq 38$
d. $h \geq 71$

17. Ricardo has agreed to tutor for the school. He owes his older brother $59 and would like to end the summer with at least $400 in savings. How many session s can Ricardo tutor to meet his goal?

f. $s \geq 31$
g. $s \geq 38$
h. $s \geq 51$
j. $s \geq 81$

18. Charlie has agreed to mow his neighbor's lawn each week and will also baby–sit some hours. If he makes $100 or more each week, his parents will charge him rent. How many hours h should Charlie agree to baby–sit each week to avoid paying rent?

a. $h \leq 15$
b. $h \geq 15$
c. $h \leq 21$
d. $h \geq 21$

Alyssa, Reggie, and Cassie are meeting some friends at the movies and have stopped at the refreshment stand. The table below shows some of the items for sale and their prices. Use this information to answer questions 19–21.

19. Alyssa has $7 and would like to buy fruit snacks for as many of her friends as possible. Which inequality below can be solved to find the number of fruit snacks f she can buy?

Menu Item	Price ($)
Popcorn	3.50
Drink	3.00
Hot Dog	2.50
Nachos	2.50
Fruit Snack	2.00

    a. $2f \leq 7$
    b. $2f < 7$
    c. $7f \leq 2$
    d. $7f < 2$

20. Reggie brought $13 and is going to buy popcorn for the group. Which answer below shows the possible numbers of popcorn p Reggie can buy for his friends?

    f.   0, 1, or 2
    g.   0, 1, 2, or 3
    h.   0, 1, 2, 3, or 4
    f.   0, 1, 2, 3, 4, or 5

21. The movie theater donates 12% of its sales to charity. From Cassie's purchases, the theater will donate at least $2.15. Which inequality below shows the amount of money m that Cassie spent at the refreshment stand?

    a. $m \geq 17.92$
    b. $m \leq 17.92$
    c. $m \geq 25.80$
    d. $m \leq 25.80$