# HOMEWORK: Inequalities Problem Solving

### Write the correct answer.

1. A citizen must be at least 35 years old in order to run for the Presidency of the United States. Define a variable and write an inequality for this situation.
2. A certain elevator can hold no more than 2500 pounds. Define a variable and write an inequality for this situation.
3. Approximately 30% of the land on Earth is forested, but this percent is decreasing due to construction. Write

and graph an inequality for this situation.

1. Khalil weighed 125 pounds before he started to gain weight to play football. Write and graph an inequality for this situation.

5. Sumiko is allowed to watch no more than 10 hours of television each week. She has watched 4 hours of television already. Write and solve an inequality to show how many more hours of television Sumiko can watch.

6. 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 Earth. Write and solve an inequality to show how much higher the rocket must climb before it releases the satellite.

7. 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.

8. Felix wants to get at least one hour of exercise each day. Today, he has run for 40 minutes. Write, solve, and graph an inequality that shows how much longer Felix needs to exercise to reach his goal.

9. Karin has $3 to spend in the arcade. The game she likes costs 50¢ per play. What are the possible numbers of times that she can play?

10. 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?

### 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 5–7.

1. 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** 2*f* < 7 **C** 7*f* < 2

**B** 2*f* < 7 **D** 7*f* < 2

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

**F** 0, 1, or 2 **H** 0, 1, 2, 3, or 4

**G** 0, 1, 2, or 3 **J** 0, 1, 2, 3, 4, or 5

1. 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* > 17.92 **C** *m* > 25.80

**B** *m* < 17.92 **D** *m* < 25.80

### 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 4–6.

4. 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 numbers 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* > 14 **C** *h* > 38

**B** *h* > 23 **D** *h* > 71

5. 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 sessions *s* can Ricardo tutor to meet his goal?

**F** *s* > 31 **H** *s* > 51

**G** *s* > 38 **J** *s* > 83

6. 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* < 15 **C** *h* < 21

**B** *h* > 15 **D** *h* > 21