Decimals word problems

Tim is a postman that works at a local post office. The basic postage is $1.25 and covers any letter that is lighter than 7.5 grams. For heavier letters, extra postage of $0.87 is needed for every 10 grams over 7.5 grams.

1.   Can a letter that is $\frac{705}{100}$ grams be covered by the basic postage?

2.   Emma mailed a letter that weighs 12.92 grams. Compared to the weight covered by basic postage, how much heavier is Emma's letter?

3.   What is the postage needed for a letter that is 37.5 gram?

4.   On average, the post office processes 45.6 letters every hour. How many letters can the office process during the 9 hours it is open?

5.   During Christmas, the post office opens 12 hours a day. Compared to usual days, how many more letters can the post office process?

6.   Tim works on a 6-hour shift today. He has 2 bags of mail that he needs to deliver today. One is 24.52 kilograms and the other one is 18.8 kilograms. What is the total weight of the two bags of mail?

Answers

1. $\frac{705}{100} = 7.05$

    $7.05 < 7.5$

    Yes, a letter that is $\frac{705}{100}$ grams can be covered by basic postage.

2. $12.92 - 7.5 = 5.42$

    Emma's letter is 5.42 grams heavier than the weight covered by basic postage.

3. $37.5 - 7.5 = 30$ grams

    The letter is 30 grams heavier than the weight covered by basic postage.

    $1.25 + 0.87 \times \left(\frac{30}{10}\right) = 3.86$

    The postage is $3.86.

4. $45.6 \times 9 = 410.4$

    The post office can process 410.4 letters during the 9 hours it is open.

5. $45.6 \times (12 - 9) = 136.8$

    The post office can process 136.8 extra letters per day during Christmas.

6. $24.52 + 18.8 = 43.32$

    The total weight of the two bags of mail is 43.32 kilograms.