

Word Problems - Foundry Jobs

In a 24-hour day, there are three shifts at Waupaca Foundry. A typical shift is 10 hours, and each worker takes two 15-minute breaks and a 30-minute lunch during that shift. Use this information to solve the problems below. Make sure to show your work.

1. If 50 men/women work in the Melt Room per shift and there are three shifts, how many workers will work in the Melt Room per day?
2. If a plant uses 52000kwh of electricity per hour and the Melt Room draws 42,000kwh of electricity, what percentage of electricity did the Melt Room draw?
3. There are four Overhead Cranes. How many Crane operators work per day?
4. Three Hot Metal Carriers (HMC) transfer up to 8000 pounds of iron. It takes 3 to 4 minutes to take iron out of the furnace. Then each lap to transfer the iron from the furnace to a Vertical Molding Machine (VMM) and back to the furnace takes 6 to 8 minutes. How many laps can a carrier make in a shift? Compute the number of laps from the furnace to the VMM and back per shift, both on the low end and the high end of the estimate in the problem.

Answers - Word Problems - Foundry Jobs

1. If 50 men/women work in the Melt Room per shift and there are three shifts, how many workers will work in the Melt Room per day?

$$50 * 3 = 150$$

2. If a plant uses 52000kwh of electricity per hour and the Melt Room draws 42,000kwh of electricity, what percentage of electricity did the Melt Room draw?

$$52000 / 42000 = .8076 * 100 = 81\%$$

3. There are four Overhead Cranes. How many Crane operators work per day?

$$4 * 3 = 12$$

4. Three Hot Metal Carriers (HMC) transfer up to 8000 pounds of iron. It takes 3 to 4 minutes to take iron out of the furnace. Then each lap to transfer the iron from the furnace to a Vertical Molding Machine (VMM) and back to the furnace takes 6 to 8 minutes. How many laps can a carrier make in a shift? Compute the number of laps from the furnace to the VMM and back per shift, both on the low end and the high end of the estimate in the problem.

$$10 \text{ hours} \times 60 = 600 \text{ minutes}$$

$$600 - 60 \text{ (breaks and lunch)} = 540 \text{ minutes}$$

$$540 / (3+6) = 60 \text{ laps}$$

$$540 / (4+8) = 45 \text{ laps}$$

One carrier can make between 45 and 60 laps per shift.