Labor Costs Worksheet **Name** KEY

1. One employee is using a nail gun and can do a job in 5 hours. Another employee is using a hammer and can do the job in 6.5 hours. If they are both working on the job, how long will it take?

	Time	Amount of work done in 1 hr
Nail Gun	5	$\frac{1}{5}$
Hammer	6.5	$\frac{1}{6.5}$
Both	X hrs	$\frac{1}{X}$

$32.5x\left[\frac{1}{5}+\frac{1}{6.5}=\frac{1}{x}\right]$ LCD = $32.5x$

$6.5x + 5x = 32.5$

$\frac{11.5x}{11.5} = \frac{32.5}{11.5}$

$x \approx 2.8$ hours

$.8\text{ hr} \times \frac{60\text{ minute}}{1\text{ hour}} =$ 48 minutes

2 hr 48 minutes

2. One employee is using a nail gun and can do the job in 4 hours. Another employee is using a hammer and can do the job in 5hours 45 minutes. If they are both working on the job, how long will it take?

	Time	Amount of work done in 1 hr
Nail Gun	4	$\frac{1}{4}$
Hammer	5.75	$\frac{1}{5.75}$
Both	X	$\frac{1}{x}$

$23x\left[\frac{1}{4}+\frac{1}{5.75}=\frac{1}{x}\right]$ LCD = $23x$

$5.75x + 4x = 23$

$\frac{9.75x}{9.75} = \frac{23}{9.75}$

$x = 2.36$ hours

$.36\text{ hr} \times \frac{60\text{ minutes}}{1\text{ hr}}$

$\approx$ 2 hours 22 minutes

3. A company hires both builders and finishers to complete a project. A builder makes $12 an hour while the finisher makes $25 an hour. Write an equation using b for builder and f for finisher to represent the cost for labor. If a builder works 18 hours and the finisher works 10 hours on a job, how much is the cost for labor?

$\$12b + \$25f = \text{Cost}$

$\$12(18) + \$25(10) = \text{Cost}$

$\$216 + \$250 = \text{cost}$

$466 = cost

4. A company hires builders, finishers, and painters to complete a project. A builder makes $12 an hour, the finisher makes $20.50 an hour, and the painter makes $8.50 an hour. Write an equation using b for builder, f for finisher, and p for painter to represent the cost for labor. If a builder works 12 hours, the finisher works 8 hours on a job, and the painter works 2 hours, how much is the cost for labor?

$12b + $20.50f + $8.50p = cost

$12(12) + $20.50(8) + $8.50(2) = cost

$144 + $164 + $17 = Cost

$325 = Cost

5. One pump can fill a tank with oil in 3 hours. A second pump can fill the same tank in 4 hours. If both pumps are used at the same time, how long will they take to fill the tank?

	Time to fill tank	Amount of tank filled in 1 hour
Pump 1	3 hrs	$\frac{1}{3}$
Pump 2	4 hrs	$\frac{1}{4}$
Both pumps	X hrs	$\frac{1}{x}$

LCD = 12x

$12x\left[\frac{1}{3} + \frac{1}{4} = \frac{1}{x}\right]$

$4x + 3x = 12$

$7x = 12$

$x = \frac{12}{7}$

$x \approx 1.7$ hours

.7 hours $\times \frac{60 \text{ minutes}}{1 \text{ hr}}$

1 hr 42 minutes

6. Ann can trim hedges around her property in 8 hours using an electric hedge trimmer. Dave can do the same job in 15 hours using a manual trimmer. How long will it take them to trim the hedges together?

	Time	Amount of hedges done in 1 hr
Ann	8 hr	$\frac{1}{8}$
Dave	15 hr	$\frac{1}{15}$
Both	X hr	$\frac{1}{x}$

LCD = 120x

$120x\left[\frac{1}{8} + \frac{1}{15} = \frac{1}{x}\right]$

$15x + 8x = 120$

$\frac{23x}{23} = \frac{120}{23}$

$x = \frac{120}{23}$

$x \approx 5.2$ hours

.2 hr $\times \frac{60 \text{ minutes}}{1 \text{ hr}}$

≈ 5 hr 12 minutes