

Lesson 2 - Equations, Inequalities, and Literal Formulas - Worked Examples

Easy: Solve $4x - 7 = 21$.

Step 1: Add 7: $4x = 28$.

Step 2: Divide by 4: $x = 7$.

Medium: Solve $P = IE$ for E .

Step 1: E is multiplied by I .

Step 2: Divide both sides by I .

Step 3: $E = P/I$.

Hard: Solve $-3x + 5 > 17$.

Step 1: Subtract 5: $-3x > 12$.

Step 2: Divide by -3 .

Step 3: Reverse the sign: $x < -4$.

Lesson 2 - Equations, Inequalities, and Literal Formulas - Practice Answers 1

1. D - Add 8 to both sides: $x < -3 + 8$.

Answer: $x < 5$

Why not A: reversed the inequality sign although nothing was multiplied or divided by a negative number.

Why not B: subtracted 8 from both sides instead of adding 8.

Why not C: changed the strict $<$ into $\leq$.

2. C - Add 11 to both sides: $x < -10 + 11$.

Answer: $x < 1$

Why not A: subtracted 11 from both sides instead of adding 11.

Why not B: changed the strict $<$ into $\leq$.

Why not D: reversed the inequality sign although nothing was multiplied or divided by a negative number.

3. A - Add 15 to both sides: $x < 16 + 15$.

Answer: $x < 31$

Why not B: subtracted 15 from both sides instead of adding 15.

Why not C: reversed the inequality sign although nothing was multiplied or divided by a negative number.

Why not D: changed the strict $<$ into $\leq$.

4. D - Divide both sides by 3: $x = -84 \div 3$.

A negative number divided by a positive number is negative.

Answer: -28

Why not A: subtracted 3 from -84 instead of dividing by 3.

Why not B: multiplied -84 by 3 instead of dividing.

Why not C: divided -84 by 3 but dropped the negative sign.

A full mock interview, start to finish

Eight questions, about 12 minutes: the length SOTX JATC publishes (10-15 minutes). This mock uses a second career changer, a warehouse team lead, so you hear the same scoring points from a different background. Read the answers out loud once, then write your own version with your real facts. Notes in blue explain why each answer scores high.

Panel: Tell us a little about yourself.

You: I'm 26 and I've worked at a distribution warehouse for four years, the last two as night-shift team lead for eight people. I'm forklift certified, I run our cycle counts, and I haven't missed a shift this year. Since March I've been getting ready for this: I registered for my state's apprentice electrician license, finished an algebra refresher at the community college, and practiced for the aptitude test four nights a week.

Why it scores: Under 90 seconds, ends on the apprenticeship, and every claim is something the panel can check.

Panel: Why do you want to be an electrician?

You: Our building added a conveyor line last year, and I spent two nights moving pallets for the electricians who wired it. I watched them read the drawings and test every circuit before anyone switched it on. Warehouse work keeps me busy, but I'm doing the same job I did four years ago. I want a trade where I'm better every year and can point to what I built.

Why it scores: A specific moment, a real reason, no talk about money first. Scores on interest.

Panel: How did you prepare for the aptitude test?

You: I took a diagnostic first and saw that functions and word problems were my weak spots. I studied 45 minutes, four nights a week, for eight weeks, kept a list of every mistake, and redid those problems on Sundays. My score went up on each of my three timed practice tests.

Why it scores: A plan, numbers and follow-through. Scores on math background and attitude.

Panel: Tell us about a time you made a mistake at work.

You: I once signed off a trailer count without walking it myself because we were behind. We were twelve cartons short, and I told my manager before the shift ended. We found them on the next trailer. Now I never sign for anything I haven't checked, and I teach new hires the same rule.

Why it scores: Owns the mistake, fixes it, and shows the habit that came out of it. Scores on character.