Math Review

Scenarios and Problems
Instructor Guide

Module 5: Converting Fractions, Decimals, and Percents

Table of Contents

Converting Fractions, Decimals, and Percents (Lineworker)

Scenario

"Well, how far have we gone?" Frank, the head lineworker, asks Debra.

Frank and his crew are conducting thermal inspections on transformer taps in a 1-mile-long section of a residential subdivision.

"According to the GPS, we have traveled .35 miles in the first 2 hours," Debra replies.

What percentage of the residential subdivision section had the crew inspected in the first 2 hours?

A. 3.5%
B. 7%
C. 65%
D. 35% – Correct Answer

Frank and his crew are inspecting residential transformers
Courtesy Wikimediacommons, image is in the public domain

Problems
Converting Fractions to Decimals

Gail and the line crew were pulling wire for a new subdivision. The crew had completed 5/6 of a mile of the 1-mile wire pull. How would the crew express how much line they completed in decimal form?

A. 8.33 miles
B. 0.0833 of a mile
C. 0.833 of a mile – Correct Answer
D. 0.00833 of a mile

Mateo and his crew were assigned to inspect transformer taps after several failures had been reported in an area rebuilt after a winter storm. Mateo found that 1/5 of all the taps that had inspected were installed incorrectly. How would Mateo express the crew's finding in decimal form?

A. 20% of the taps
B. 2.00 of the taps
C. 0.02 of the taps
D. 0.20 of the taps – Correct Answer

Monika was assigned to patrol a 1-mile-long right-of-way to identify any damage to the electrical system after a thunderstorm. Monika had traveled about 1/8 of a mile before she was stopped by a large tree that had fallen across the electrical wires. How would Monika express the distance she had traveled as a decimal?

A. 0.125 of a mile – Correct Answer
B. 1.25 miles
C. 12.5 miles
D. 1.25% miles

Converting Decimals to Percents

Bill is checking the current transformers on an industrial meter. The proper reading should be 1 ampere. Bill found that the current transformer was reading 0.972 amperes. How would Bill report his findings as a percentage of the proper reading of 1 ampere?

A. 97.2% – Correct Answer
B. 9.72%
C. 0.972%
D. 0.0972%

Jane is performing oil level inspections on oil-fill substation transformers. The reading on the sight glass indicated 0.45 full. How would Jane report her findings as a percentage?

A. 4.5% full
B. 0.045% full
C. 45% full – Correct Answer
D. 0.45% full

Converting Percents to Decimals

Karen was assigned to monitor the total amount of cable being removed from a reel during an overhead cable pulling job. Halfway through the job, Karen noted that 42% of the reel had been used. How would Karen report the percent used in decimal form?

A. 4.20 of the reel used
B. 0.42 of the reel used – Correct Answer
C. 0.50 of the reel used
D. 0.042 of the reel used

Bob and his crew were assigned to install ground rods at the base of the utility poles in a new subdivision. When the crew stopped for lunch, they had installed 66% of the ground rods and had 34% remaining. How would the crew express the amount of remaining work in a decimal?

A. 0.66 of the rods remaining
B. 3.40 of the rods remaining
C. 0.34 of the rods remaining – Correct Answer
D. 0.034 of the rods remaining

Chun works in the store room. On the night shift, her job is to inspect all the fire extinguishers on the line trucks and replace any of them that are getting ready to expire or indicate low pressure. Chun had completed 52% of the inspections during the first night of her shift and had 48% to complete on the next night. How would Chun express what she had completed as a decimal?

A. 0.48 of the inspections complete
B. 5.20 of the inspections complete
C. 0.052 of the inspections complete
D. 0.52 of the inspections complete – Correct Answer

Converting Fractions, Decimals, and Percents (Pipefitter/Pipelayer/ Welder)

Scenario

"How is that weld coming along, Frank?" Danaria asks.

Frank is welding two 1-inch-thick steel plates to cover an open trench on a new gas system installation.

"Looks like I have 0.281 inches of the 1-inch weld complete," Frank says after checking the weld depth.

How many inches deep is the weld if Frank reported it as a percentage?

A. 2.81 %
B. 0.0281%
C. 281%
D. 28.1% – Correct Answer

Frank is welding two metal sheet together
Courtesy [ken fager](#) via flickr.com, image is licensed under creative commons

Problems
Converting Fractions to Decimals

Ned is using a welding gage to read the depth of a root weld for welding two lengths of pipe together. Ned's reading indicates 3/16 inches of a root weld gap. How would Ned report his reading in a decimal?

A. 1.88 in
B. 0.188 in – Correct Answer
C. 0.0187 in
D. 0.0531 in

Martina is assigned to check gas meter calibrations at a housing complex. Martina found that 1/5 of the meters needed calibration. How would Martina report his findings as a decimal number?

A. 0.20 gas meters – Correct Answer
B. 2.00 gas meters
C. 0.02 gas meters
D. 20% of the gas meters

Laurie is restocking the gas distribution trucks with pipe fusion fittings. She found that 2/3 of the trucks needed 1 inch butt fusion fittings. How would Laurie report her findings to her supervisor as a decimal number?

A. 667% of the trucks
B. 6.67 of the trucks
C. 0.667 of the trucks – Correct Answer
D. 0.0667 of the trucks

Converting Decimals to Percents

Avery and the gas crew are installing 1 mile of new residential gas piping in a subdivision. The crew had completed 0.432 miles on the first day. What percentage of the project would Avery report to the supervisor is completed?

A. 43.2% – Correct Answer
B. 4.32%
C. 0.432%
D. 432%

Mateo and the gas distribution crew have reported to a customer's complaint of the smell of natural gas on a rural road. The crew is using a gas meter and has walked 0.12 miles of the 1-mile road. What percentage of the road has Mateo's crew inspected?

A. 1.2%
B. 0.12%
C. 12% – Correct Answer
D. 120%

Converting Percents to Decimals

Nancy and her gas distribution crew are assigned to complete 24 pipe fusions for a piping system upgrade. When the crew stopped for lunch, they had completed 8 of the fusions, or 33%. How would Nancy report what the crew had completed to her supervisor in decimal form?

A. 3.30 of the fusions completed
B. 0.33 of the fusions completed – Correct Answer
C. 0.66 of the fusions completed
D. 0.80 of the fusions completed

Chun works in the store room. During her night shift, her job is to inspect all the fire extinguishers on the gas trucks and replace any of them that are getting ready to expire or indicate low pressure. Chun had completed 65% of the inspections during the first night of her shift and had 35% to complete on the next night. How would Chun express what she had completed in decimal form?

A. 0.35 of the inspections complete
B. 6.50 of the inspections complete
C. 0.065 of the inspections complete
D. 0.65 of the inspections complete – Correct Answer

Bret is reviewing piping system drawings prior to starting the piping installation in an industrial park. The crew is in a hurry to get started, but Bret has only reviewed 62% of all the piping diagrams and he still has 38% of the drawings to review. How would Bret report to the crew in decimal form how many more drawings he needs to review prior to starting work?

A. 0.38 of the drawings – Correct Answer
B. 3.80 of the drawings
C. 38.0 of the drawings
D. 0.038 of the drawings