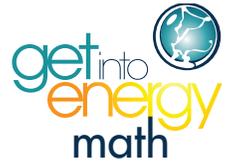


Name: _____ Date: _____



Get Into Energy Math
Student Quiz 11
Fractions and Decimals

1. Alex is doing a splice on an underground service. He used a $1\frac{3}{4}$ -inch splice on one end and, due to cable damage, had to use a $3\frac{2}{3}$ -inch splice on the other end. Instead of reporting $5\frac{5}{12}$ inches of splice being used, Alex could use which of the following to report the amount of splice used in inches?

- A. $\frac{37}{12}$ inches of splicing material
- B. $\frac{65}{12}$ inches of splicing material
- C. $\frac{22}{12}$ inches of splicing material
- D. $5\frac{5}{12}$ inches of splicing material

2. Holly and the line crew are setting poles for a power upgrade. The crew is required to set 30 poles and they have completed 6 of them. What fraction of the poles has been set?

- A. $\frac{4}{5}$ of the poles
- B. 20% of the poles
- C. $\frac{1}{5}$ of the poles
- D. $\frac{1}{6}$ of the poles

3. While overhauling the plant's 3 boilers, insulation tiles were replaced. Boiler #1 took $\frac{3}{4}$ pallet of tiles, boiler #2 took $\frac{5}{8}$ pallet of tiles, and boiler #3 took $\frac{1}{2}$ pallet of tiles. If $1\frac{7}{8}$ pallets of tiles were used, how else could the used amount be recorded?

- A. $\frac{9}{14}$ pallets of tiles
- B. $\frac{17}{8}$ pallets of tiles
- C. $\frac{6}{8}$ pallets of tiles
- D. $\frac{15}{8}$ pallets of tiles

4. The line crew is running ground wires for overhead sensing insulators. The crews used $\frac{1}{2}$ of a spool for one job, $\frac{1}{4}$ of a spool for another, and $\frac{1}{6}$ of a spool for the final job. What fraction of the ground line spool remains?

- A. $\frac{11}{12}$ of a spool
- B. $\frac{1}{3}$ of a spool
- C. $1\frac{1}{3}$ of a spool
- D. $\frac{1}{12}$ of a spool

5. Lynne and her line crew were notified that down ground wires are missing from multiple poles in the town. The crews have to do a drive-by inspection, identify how many poles will need new down ground wires, and record their inspections in mileage inspected. The crews completed the following mileage of inspections: $1\frac{3}{4}$ miles, $5\frac{1}{2}$ miles, $3\frac{1}{3}$ miles, and $8\frac{1}{6}$ miles. How many miles did the crews inspect?

- A. $17\frac{3}{4}$ miles
- B. 18 miles
- C. $18\frac{2}{5}$ miles
- D. $18\frac{3}{4}$ miles

6. Holly is a stock person who is responsible for restocking the overhead trucks at the end of the day. Holly has $\frac{1}{2}$ a case of fuses to divide among 6 overhead line distribution trucks. What fraction of the fuse cases will be put on each of the trucks?

- A. $\frac{1}{12}$ of the fuse cases
- B. $\frac{1}{6}$ of the fuse cases
- C. $\frac{1}{3}$ of the fuse cases
- D. $\frac{1}{9}$ of the fuse cases

7. Two partial train cars of coal were delivered today. By weight, the first car was $\frac{13}{32}$ full and the second was $\frac{5}{8}$ full. What is the sum of the two carloads?

- A. $\frac{5}{32}$ full carload
- B. $1 \frac{1}{32}$ full carload
- C. $\frac{20}{32}$ or $\frac{5}{8}$ full carload
- D. $\frac{10}{32}$ or $\frac{5}{16}$ full carload

8. Kari, a new plant operator, is preparing her work plans for the day. The two jobs she was assigned each came with procedure cards that listed materials needed, estimated time for completion, and the steps of the procedure. If the first job had an estimated time of $2 \frac{1}{2}$ hours and the second was estimated to take $1 \frac{3}{4}$ hours, how many total estimated hours of maintenance was Kari assigned?

- A. $3 \frac{2}{3}$ hours
- B. $4 \frac{1}{4}$ hours
- C. $4 \frac{1}{2}$ hours
- D. $3 \frac{1}{4}$ hours

9. Each quarter, $\frac{1}{8}$ of the solar cell array is bench tested for effectiveness. If the electrical shop wants to test an equal amount of the array each month of the 3-month quarter, what fraction of the total array is tested each month?

- A. $\frac{1}{24}$ of the array
- B. $\frac{3}{8}$ of the array
- C. $\frac{1}{3}$ of the array
- D. $\frac{3}{24}$ or $\frac{1}{8}$ of the array

10. Enrique received $6\frac{1}{2}$ pallets with buckets of bearing grease. If each pallet holds 8 buckets and Enrique wants to evenly distribute the buckets to four plants, how many pallets should he send to each plant?

- A. 13 buckets
- B. $1\frac{5}{8}$ pallets
- C. $1\frac{1}{2}$ pallets
- D. 10 buckets

11. Kath was making multiple passes to complete a weld. On her first pass, Kath filled $\frac{1}{2}$ of the weld gap. On Kath's second pass, she filled an additional $\frac{1}{3}$ of the weld gap. How much of the total weld gap has Kath filled on the 2 passes?

- A. $\frac{2}{5}$ of the weld gap filled
- B. $\frac{1}{6}$ of the weld gap filled
- C. $\frac{5}{6}$ of the weld gap filled
- D. $\frac{2}{6}$ or $\frac{1}{3}$ of the weld gap filled

12. Tom's gas distribution crew is responding to a gas outage impacting 20 residential customers. The crew estimates $\frac{1}{5}$ of an hour to relight each pilot light. How many hours will it take Tom's crew to relight all the pilots?

- A. 4 hours
- B. $1\frac{3}{4}$ hours
- C. 8 hours
- D. 5 hours

13. Mateo and his partner were assigned to inspect transformer taps after several failures had been reported in an area rebuilt after a winter storm. Mateo found that $\frac{1}{5}$ of all the taps that had been inspected were installed incorrectly. How would Mateo express his findings 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

14. 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
- C. 0.66 of the fusions completed
- D. 0.80 of the fusions completed

15. Chin and his crew are adding oil to the transformers in a substation. Chin had a 55-gallon drum of oil when he started the job. His crew has added 5 gallons each to 5 transformers for a total of 25 gallons of oil. What percentage is 25 gallons of the 55-gallon barrel?

- A. 45.5%
- B. 54.5%
- C. 22%
- D. 50%

16. Jack and the crew are doing pole inspections. They have completed 25% of the 60 poles the crew has to inspect. How many poles has the crew inspected?

- A. 30 poles
- B. 15 poles
- C. 45 poles
- D. 25 poles

17. Jack and his crew have to do thermal inspections on the connectors in a business development. The crew has completed 35%, or 63 connectors, as of their lunch break. How many total connectors does the crew have to inspect on this day?

- A. 180 connectors
- B. 103 connectors
- C. 117 connectors
- D. 85 connectors

18. In order to comply with a request to raise the plant spinning reserve to at least 200 MW, Chin will have to bring a 100 MW steam turbo-generator online that will raise the plant's actual spinning reserve from the current 120 MW to 220 MW. By what actual percentage will Chin be increasing the spinning reserve?

- A. 270%
- B. 183%
- C. 83.3%
- D. 40%

19. Bart has been asked to dispatch 200 MW-h of energy to the transmission inter-tie substation during his current shift. Thus far, he has dispatched 30% of this amount. How much energy in MW-h remains to be dispatched?

- A. 30 MW-h
- B. 70 MW-h
- C. 140 MW-h
- D. 170 MW-h

20. As the afternoon temperature and load both continue to rise, Chin realizes that he needs to rapidly increase the plant's current spinning reserve by bringing the combustion gas turbine peaking unit online. The peaking unit will increase the current 60 MW of spinning reserve by an additional 130%. What additional spinning reserve in MW does the 130% represent?

- A. 78 MW
- B. 130 MW
- C. 138 MW
- D. 190 MW

21. Frank has to complete 30 feet of welding in order to connect 2 plates of steel together to cover a gas trench in a roadway. By 10 a.m., Frank has completed 8 feet. What percentage of the 30 feet has Frank completed?

- A. 26.6%
- B. 37.5%
- C. 73.4%
- D. 15%

22. Gail and the gas crew have responded to a reported gas leak. In order to find the leak, the crew has to complete 60 bar holes around the house foundation. The crew completed 15% of the holes in the first 10 minutes of their work. How many holes did the crew complete in the first 10 minutes?

- A. 3 holes
- B. 9 holes
- C. 5 holes
- D. 33 holes

23. Iris is putting a new gas main down under a town road. The town crew is cutting the asphalt so the gas trench can be dug in the road. The town crew has cut 45 feet of the asphalt, which is only 15% of the entire length of the new gas line. How many total feet of asphalt need to be removed so the gas crew can begin digging the trench?

- A. 675 ft
- B. 333 ft
- C. 300 ft
- D. 630 ft

24. Alice is working with a crew pulling an underground cable. The cable must be lubricated during the pull. Alice is expected to use 8 pounds of lubricant for every 100 feet of cable. The cable pull is 800 feet long. How many pounds of lubricant does Alice need to load into the truck?

- A. 64 lbs
- B. 76 lbs
- C. 25 lbs
- D. 48 lbs

25. Pete has to rig a 1,300-pound transformer up to the top of a pole. If he uses a $\frac{3}{8}$ -inch polypropylene rope, he can pick up 2.8 times more weight than the $\frac{3}{8}$ -inch nylon rope he had planned on using. If the $\frac{3}{8}$ -inch nylon rope can pick up 1,300 pounds, how many additional pounds can Pete pick up using the $\frac{3}{8}$ -inch polypropylene rope?

- A. 1,820 lbs
- B. 2,598 lbs
- C. 2,340 lbs
- D. 2,600 lbs