

SATPREP

Assignment: *Rate*

- If four pens cost \$1.96, what is the greatest number of pens that can be purchased for \$7.68?
 - 12
 - 14
 - 15
 - 16
- Two pipes of different diameters may be used to fill a swimming pool. The pipe with the larger diameter working alone can fill the swimming pool 1.25 times faster than the other pipe when it works alone. One hour after the larger pipe is opened, the smaller pipe is opened, and the swimming pool is filled 5 hours later. Which equation could be used to find the number of hours, x , it would take for the larger pipe to fill the pool working alone?
 - $\left(\frac{1}{1.25x}\right)^5 + \left(\frac{1}{x}\right)^6 = 1$
 - $\left(\frac{1}{x}\right)^5 + \left(\frac{1}{1.25x}\right)^6 = 1$
 - $\left(\frac{x}{5}\right)1.25 + \left(\frac{x}{6}\right) = 1$
 - $\left(\frac{x}{5}\right) + \left(\frac{x}{6}\right)1.25 = 1$
- On a certain map, 1.5 inches represent a distance of 120 miles. If two cities on this map are 1 foot apart, what is the distance, in miles, between the cities?
 - 180
 - 480
 - 960
 - 1,080
- A freight train left a station at 12 noon, going north at a rate of 50 miles per hour. At 1:00 P.M. a passenger train left the same station, going south at a rate of 60 miles per hour. At what time were the trains 380 miles apart?
 - 3:00 P.M.
 - 4:00 P.M.
 - 4:30 P.M.
 - 5:00 P.M.
- A man drove to work at an average rate of speed of 60 miles per hour and returned over the same route driving at an average rate of speed of 40 miles per hour. If his total driving time was 1 hour, what was the total number of miles in the round trip?
 - 12
 - 24
 - 30
 - 48

6. If x people working together at the same rate can complete a job in h hours, what part of the same job can one person working alone complete in k hours?
- (A) $\frac{k}{xh}$
(B) $\frac{h}{xk}$
(C) $\frac{k}{x+h}$
(D) $\frac{kh}{x}$
7. An electrician can install 5 light fixtures in 3 hours. Working at that rate, how long will it take the electrician to install 8 light fixtures?
- (A) $3\frac{4}{5}$ hours
(B) $4\frac{1}{5}$ hours
(C) $4\frac{1}{2}$ hours
(D) $4\frac{4}{5}$ hours
8. A freight train and a passenger train start toward each other at the same time from two towns that are 500 miles apart. After 3 hours, the trains are still 80 miles apart. If the average rate of speed of the passenger train is 20 miles per hour faster than the average rate of speed of the freight train, what is the average rate of speed, in miles per hour, of the freight train?
- (A) 40
(B) 45
(C) 50
(D) 60
9. One machine can seal 360 packages per hour, and an older machine can seal 140 packages per hour. How many MINUTES will the two machines working together take to seal a total of 700 packages?
- (A) 48
(B) 72
(C) 84
(D) 90
10. A motor boat traveling at 18 miles per hour traveled the length of a lake in one-quarter of an hour less time than it took when traveling at 12 miles per hour. What was the length in miles of the lake?
- (A) 6
(B) 9
(C) 12
(D) 15
11. Carmen went on a trip of 120 miles, traveling at an average of x miles per hour. Several days later she returned over the same route at a rate that was 5 miles per hour faster than her previous rate. If the time for the return trip was one-third of an hour less than the time for the outgoing trip, which equation can be used to find the value of x ?

- (A) $\frac{120}{x+5} = \frac{1}{3}$
 (B) $\frac{x}{120} = \frac{x+5}{120} - \frac{1}{3}$
 (C) $\frac{120}{x+(x+5)} = \frac{1}{3}$
 (D) $\frac{120}{x} = \frac{120}{x+5} + \frac{1}{3}$

12. Jonathan drove to the airport to pick up his friend. A rainstorm forced him to drive at an average speed of 45 miles per hour, reaching the airport in 3 hours. He drove back home at an average speed of 55 miles per hour. How long, to the *nearest tenth of an hour*, did the trip home take him?
- (A) 2.0 hours
 (B) 2.5 hours
 (C) 2.8 hours
 (D) 3.7 hours
13. A plumber works twice as fast as his apprentice. After the plumber has worked alone for 3 hours, his apprentice joins him and working together they complete the job 4 hours later. How many hours would it have taken the plumber to do the entire job by himself?
- (A) 9
 (B) 12
 (C) 14
 (D) 18

Grid-In

1. Fruit for a dessert costs \$1.20 a pound. If 5 pounds of fruit are needed to make a dessert that serves 18 people, what is the cost of the fruit needed to make enough of the same dessert to serve 24 people?
2. A printing press produces 4,600 flyers per hour. At this rate, in how many *minutes* can the same printing press produce 920 flyers?

FOREIGN CURRENCY CONVERSIONS

U.S. Dollar to British Pound = 1.56 to 1

British Pound to Euro = 1 to 1.38

3. Foreign currency conversion rates for the British pound, U.S. dollar, and Euro are listed above. What would be the cost in U.S. dollars for a shirt that has a purchase price of 46 Euros, correct to the *nearest dollar*?
4. Joseph typed a 1,200-word essay in 25 minutes with an average of 240 words on a page. At this rate, how many 240-word pages can he type in 1 hour?