Practice Set 3

1. How many prime numbers are between 0 and 20 inclusive?

2. If $q \times 34 \times 36 \times 38 = 17 \times 18 \times 19$, then $q =$

3. If $\dfrac{3}{4}$ of a cup of a certain drink mix is needed for every 2 quarts of water, how many cups of this drink mix is needed for 10 quarts of water?

4. What is $\frac{1}{4}$ percent of 16?

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     ⦸ ⊘ ⊘ ⦸
     ⦿ ⦿ ⦿ ⦿
       ⓪ ⓪ ⓪
     ① ① ① ①
     ② ② ② ②
     ③ ③ ③ ③
     ④ ④ ④ ④
     ⑤ ⑤ ⑤ ⑤
     ⑥ ⑥ ⑥ ⑥
     ⑦ ⑦ ⑦ ⑦
     ⑧ ⑧ ⑧ ⑧
     ⑨ ⑨ ⑨ ⑨
```

5. If $\frac{h}{3}$ and $\frac{h}{4}$ are integers, and if $75 < h < 100$, what is one possible value of h ?

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     ⦸ ⊘ ⊘ ⦸
     ⦿ ⦿ ⦿ ⦿
       ⓪ ⓪ ⓪
     ① ① ① ①
     ② ② ② ②
     ③ ③ ③ ③
     ④ ④ ④ ④
     ⑤ ⑤ ⑤ ⑤
     ⑥ ⑥ ⑥ ⑥
     ⑦ ⑦ ⑦ ⑦
     ⑧ ⑧ ⑧ ⑧
     ⑨ ⑨ ⑨ ⑨
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6. $\dfrac{3}{a}, \dfrac{5}{a}, \dfrac{14}{a}$

Each of the fractions above is in its simplest reduced form and a is an integer greater than 1 and less than 50. Grid in one possible value of a.

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     ⦸ ⊘ ⊘ ⦸
     ⦿ ⦿ ⦿ ⦿
       ⓪ ⓪ ⓪
     ① ① ① ①
     ② ② ② ②
     ③ ③ ③ ③
     ④ ④ ④ ④
     ⑤ ⑤ ⑤ ⑤
     ⑥ ⑥ ⑥ ⑥
     ⑦ ⑦ ⑦ ⑦
     ⑧ ⑧ ⑧ ⑧
     ⑨ ⑨ ⑨ ⑨
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7. If sales tax is calculated as 8.0% of the purchase price of an item, what is the total price paid for a $5.00 item including tax?

8. David and Eric both worked 8 hours on Saturday. if David made $10 per hour, and Eric made 50% more than David, what was the sum of their wages on Saturday?

9. If the sum of the integers 1 to 15 inclusive (1+2+3+.....15) is t, and the sum of integers 16 to 30 inclusive (16+17+18+.....30) is s, how much greater is s than t?

10. What is the greatest positive integer n such that 2^n is a factor of 12^8?