

Your name

## Test 2, October 22, 2021

This test lasts half an hour. Show your work.

1. What is a prime number?

2. Who was Ramanujan?

3. What output would the computer show on the screen if you pressed the button to run the following code?

```
potato = (3/4)*(24/2)
print("Potato plus two is ", potato +2, ".")
```

4. In Chicago, a room at the Viceroy hotel, with its 180 rooms in an 18-story building, costs \$293/night. A room at the Drake Hotel, built in 1920, costs \$210/night. The Drake is sold out for October 31-November 3. How much would you save by staying at the Drake instead of the Viceroy if your honeymoon lasted 6 nights?

5. What is  $2^{12}$ ?

6. What is  $\sqrt{49}$ ?

7. A supermarket has 215 shopping carts. If 76 are in the parking lot, what fraction are in the store?

8. What whole number is closest to  $65/9$ ?

9. What is  $\frac{2}{3}$  of half of a  $1\frac{1}{2}$ -gallon jug of ammonia?

10. Type what you'd put in an email to Mr. Chasteen telling him you are sick with the flu and will be missing class tomorrow.

11. What is 100 times  $10^{12}$ ? You may write your answer using exponents.

12. What is  $10^0$ ?

13. On August 31, corn cost \$533 per hundred bushels and soybeans cost \$1,360 per hundred bushels. If Farmer Smith needs to buy 1,900 bushels of corn and 300 bushels of soybeans to feed his pigs, how much will it cost him?

14. What is  $\frac{4}{7} \times \frac{3}{5}$ ?

15. What is the prime factorization of 12?

16. What are all the factors of 12?

17. Which of the following numbers is prime: 1, 4, 27, 31, 52?

18. What is  $\frac{1}{4} \div \frac{1}{3}$ ?

19. What is  $3\frac{1}{4} \times 2\frac{1}{3}$ ?

20. What is  $3\frac{1}{2} \times 5\frac{2}{5}$ ?

Bonus question (only if you have plenty of time at the end after doing all the other questions and checking your answers):

What is  $\frac{1}{2} \cdot \frac{2}{3} \cdot \frac{3}{4}$ ?

What is  $\frac{1}{2} \cdot \frac{2}{3} \cdot \frac{3}{4} \cdot \frac{4}{5}$ ?

What is  $\frac{1}{2} \cdot \frac{2}{3} \cdot \frac{3}{4} \cdot \frac{4}{5} \cdot \frac{5}{6}$ ?

What is  $\frac{1}{2} \cdot \frac{2}{3} \cdot \frac{3}{4} \cdot \frac{4}{5} \cdot \frac{5}{6} \cdot \frac{6}{7}$ ?

What is  $\frac{1}{2} \cdot \frac{2}{3} \cdot \frac{3}{4} \cdot \frac{4}{5} \cdot \frac{5}{6} \cdot \frac{6}{7} \cdot \frac{7}{8}$ ?

What is  $\frac{1}{2} \cdot \frac{2}{3} \cdot \frac{3}{4} \cdot \frac{4}{5} \cdot \frac{5}{6} \cdot \frac{6}{7} \cdot \frac{7}{8} \cdot \frac{8}{9}$ ?

What is  $\frac{1}{2} \cdot \frac{2}{3} \cdot \frac{3}{4} \cdot \frac{4}{5} \cdot \frac{5}{6} \cdot \frac{6}{7} \cdot \frac{7}{8} \cdot \frac{8}{9} \cdot \frac{9}{10}$ ?

What is  $\frac{1}{2} \cdot \frac{2}{3} \cdot \frac{3}{4} \cdot \frac{4}{5} \cdot \frac{5}{6} \cdot \frac{6}{7} \cdot \frac{7}{8} \cdot \frac{8}{9} \cdot \frac{9}{10} \cdot \dots \cdot \frac{98}{99} \cdot \frac{99}{100}$ ?