NAME _____ **DATE** _____

Module Test B

Module 16

Solve.

1. $\frac{4}{r} = 12$ _____

2. $\frac{x}{5} = \frac{3}{8}$ _____

3. $\frac{5}{6} - \frac{t}{6} = \frac{t}{3}$ _____

4. $\frac{1}{4} + \frac{2}{x} = \frac{5}{x}$ _____

5. $\frac{q + 4}{q + 1} - 5 = 3$ _____

6. $-3 + \frac{1}{5x} = \frac{4}{5x}$ _____

7. $\frac{3}{5} + \frac{1}{5b} = \frac{2}{b}$ _____

8. $\frac{4}{x + 3} = \frac{2}{x + 3} + 2$ _____

For questions 9–11, circle the letter of the correct answer.

9. What statement describes the function shown in the table?
   a. The function shows a direct variation.
   b. The function shows an inverse variation.
   c. The function shows neither a direct nor an inverse variation.

x	y
0	5
1	4
2	3

10. What statement describes the function shown in the table?
   a. The function shows a direct variation.
   b. The function shows an inverse variation.
   c. The function shows neither a direct nor an inverse variation.

x	y
–3	–16
–2	–24
6	8

11. What statement describes the function shown in the table?
   a. The function shows a direct variation.
   b. The function shows an inverse variation.
   c. The function shows neither a direct nor an inverse variation.

x	y
–4	–12
$\frac{1}{3}$	1
7	21

True or False.

12. The resistance R measured in Ohms, of a copper wire varies directly as its length l.

   a. If 30 feet of wire provides 300 Ohms of resistance, then 40 feet of the wire will provide 400 Ohms of resistance.

   _____

   b. If 500 Ohms of resistance are created by 4 feet of wire, then 250 Ohms of resistance are created by 8 feet of wire.

   _____

13. In order for a seesaw to be balanced, the distance *d* a person sits from the fulcrum (pivot) varies inversely as the person's weight.

 a. If Julio weighs 120 pounds and sits 5 feet from the fulcrum, then, Diego must weigh 96 pounds if the seesaw is balanced when he sits four feet from the fulcrum?

 b. If Phil weighs 180 pounds and sits 3.5 feet from the fulcrum, then, Sam must sit 4.2 feet from the fulcrum if his weight is 150 pounds?

Solve.

14. The ordered pair (–2, 10) appears in a function in which *y* varies directly as *x*.

 Write the direct variation function. _____

15. The variable *y* varies inversely as *x*: *y* is 5 when *x* is –8. Find *x* when *y* is 2.

16. The variable *y* varies directly as *x*: *y* is 2 when *x* is 12. Find *y* when *x* is 2.

17. It will take Khallad 10 hours to build a fence for the Petersons. Ron can build the same fence in 15 hours. If Khallad and Ron work together, how long will it take them to build the fence?

 a. Organize the given information into a chart.

 b. Write an equation that can be used to solve the problem.

 c. Solve the equation.

410-467-3300

18. Kelly drove 100 miles to visit her brother. She drove at a constant rate and then, made the return trip at twice the speed. The entire trip took 6 hours. What was Kelly's rate of speed *going* to visit her brother? Show all work.

19. Kyle solved the equation $\frac{x}{x-3} = 5 + \frac{x}{x-3}$ and found an answer of $x = 3$. Explain why 3 can not be a solution to the equation.

20. The circumference of a circle C can be approximated using the equation $C = (3.14)d$, where d is the circle's diameter. Does the function described by d and C show a direct variation or an inverse variation? Explain.

410-467-3300