Math II   WS#40 "Variations"   Name _____

1. If y varies directly as x and $y = 9$ when $x = 6$, find y when $x = 8$.

2. If y varies directly as x and $y = 16$ when $x = 36$, find y when $x = 54$.

3. If y varies directly as x and $x = 15$ when $y = 5$, find x when $y = 9$.

4. If y varies directly as x and $x = 33$ when $y = 22$, find x when $y = 32$.

5. Suppose y varies jointly as x and z. Find y when $x = 5$ and $z = 3$, if $y = 18$ when $x = 3$ and $z = 2$.

6. Suppose y varies jointly as x and z. Find y when $x = 6$ and $z = 8$, if $y = 6$ when $x = 4$ and $z = 2$.

7. Suppose y varies jointly as x and z. Find y when $x = 4$ and $z = 11$, if $y = 60$ when $x = 3$ and $z = 5$.

8. Suppose y varies jointly as x and z. Find y when $x = 5$ and $z = 2$, if $y = 84$ when $x = 4$ and $z = 7$.

9. If y varies directly as x and $y = 14$ when $x = 35$, find y when $x = 12$.

10. If y varies directly as x and $x = 200$ when $y = 50$, find x when $y = 1000$.

11. If y varies directly as x and $y = 39$ when $x = 52$, find y when $x = 22$.

12. If y varies directly as x and $x = 60$ when $y = 75$, find x when $y = 42$.

13. Suppose y varies jointly as x and z. Find y when $x = 6$ and $z = 11$, if $y = 120$ when $x = 5$ and $z = 12$.

14. Suppose y varies jointly as x and z. Find y when $x = 5$ and $z = 10$, if $y = 12$ when $x = 8$ and $z = 6$.

15. Suppose y varies jointly as x and z. Find y when $x = 7$ and $z = 18$, if $y = 351$ when $x = 6$ and $z = 13$.

16. Suppose y varies jointly as x and z. Find y when $x = 5$ and $z = 27$, if $y = 480$ when $x = 9$ and $z = 20$.

17. If y varies inversely as x and $y = 12$ when $x = 10$, find y when $x = 15$.

18. If y varies inversely as x and $y = 9$ when $x = 45$, find y when $x = 27$.

19. If y varies inversely as x and $y = 100$ when $x = 38$, find y when $x = 76$.

20. If y varies inversely as x and $y = 32$ when $x = 42$, find y when $x = 24$.

21. If y varies inversely as x and $y = 36$ when $x = 10$, find y when $x = 30$.

22. If y varies inversely as x and $y = 75$ when $x = 12$, find y when $x = 10$.

23. If y varies inversely as x and $y = 18$ when $x = 124$, find y when $x = 93$.

24. If y varies inversely as x and $y = 90$ when $x = 35$, find y when $x = 50$.

25. If y varies inversely as x and $y = 42$ when $x = 48$, find y when $x = 36$.

26. If y varies inversely as x and $y = 44$ when $x = 20$, find y when $x = 55$.

27. If y varies inversely as x and $y = 80$ when $x = 14$, find y when $x = 35$.

28. If y varies inversely as x and $y = 3$ when $x = 8$, find y when $x = 40$.

29. If y varies inversely as x and $y = 16$ when $x = 42$, find y when $x = 14$.

30. If y varies inversely as x and $y = 9$ when $x = 2$, find y when $x = 5$.

31. If y varies inversely as x and $y = 23$ when $x = 12$, find y when $x = 15$.

32) If y varies <u>directly</u> as x and $y = 8$ when $x = 2$, find y when $x = 6$.

33) If y varies <u>directly</u> as x and $y = -16$ when $x = 6$, find x when $y = -4$.

34) If y varies <u>directly</u> as x and $y = 132$ when $x = 11$, find y when $x = 33$.

35) If y varies <u>directly</u> as x and $y = 7$ when $x = 1.5$, find y when $x = 4$.

36) If y varies <u>jointly</u> as x and z and $y = 24$ when $x = 2$ and $z = 1$, find y when $x = 12$ and $z = 2$.

37) If y varies <u>jointly</u> as x and z and $y = 60$ when $x = 3$ and $z = 4$, find y when $x = 6$ and $z = 8$.

38) If y varies <u>jointly</u> as x and z and $y = 12$ when $x = -2$ and $z = 3$, find y when $x = 4$ and $z = -1$.

39) If y varies <u>inversely</u> as x and $y = 16$ when $x = 4$, find y when $x = 3$.

40) If y varies <u>inversely</u> as x and $y = 3$ when $x = 5$, find x when $y = 2.5$.

41) If y varies <u>inversely</u> as x and $y = -18$ when $x = 6$, find y when $x = 5$.

42) If y varies <u>directly</u> as x and $y = 5$ when $x = 0.4$, find x when $y = 37.5$.

43) If a varies <u>jointly</u> as b and and the square of d, and $a = 25$ when $d = 2$ and $b = 10$. Then was is the value of a when $b = 3$ and $d = 2$?

44) If y varies <u>inversely</u> as the square of x and if $x = 15$ when $y = 4$, what is y when $x = 3$?

45) Given y varies <u>jointly</u> as x and the positive square root of z, and <u>inversely</u> as w. Also, $y = 3$ when $x = 2$, $z = 4$ and $w = 16$. Find y when $x = 15$, $z = 36$, and $w = 5$.

46) r varies <u>directly</u> as the square of u and <u>inversely</u> as t. When $u = 4$ and $t = 2$, then $r = 24$. Find r when $u = 1$ and $t = 1$.

47) C varies <u>inversely</u> as the cubed root of b, and $c = 5$ when $b = 27$. Find c when $b = 64$.

48) y varies <u>directly</u> as x and <u>inversely</u> as z squared. If $y = 5$ when $x = 2$ and $z = 1$, find y when $x = 1$ and $z = 2$.

49) m varies <u>jointly</u> as n, and the cube of p. Find m when $n = 2$ and $p = 3$, if $m = 4$ when $n = 2$ and $p = 4$.

50) f varies <u>jointly</u> as g and the cubed root of h, and <u>inversely</u> as the square of j. If $f = 3$ when $g = 4$, $h = 27$ and $j = 2$, what is the value of f when $g = 3$, $h = 125$ and $j = 3$?

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