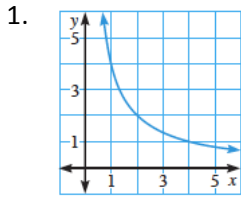


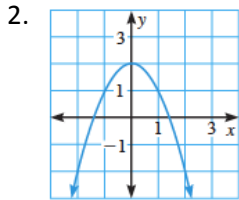
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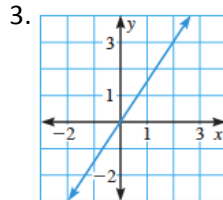
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**Math 2 Test Review
Direct and Inverse Variations**

Determine if the following represent a direct variation, inverse variation, or neither.







4. $y = 9x$

5. $y = \frac{7}{x}$

6. $y = 5(2)^x$

7.

x	2	12	9	3
y	16	96	72	24

Find the constant of variation for each direct or inverse variation.

8. $y = 1.5x$

$k =$ _____

9. $C = 2\pi r$

$k =$ _____

10. $y = \frac{9}{x}$

$k =$ _____

11. $y = \frac{x}{3}$

$k =$ _____

Answer the following questions.

12. If z varies directly as x , what will happen to z if x is multiplied by 5?

13. If y varies inversely as x , what will happen to y if x is multiplied by 4?

14. Given the table of an inverse variation function, how can you find the constant of variation?

15. Given the table of a direct variation function, how can you find the constant of variation?

Given the tables below, fill out the chart.

16.

x	6	8	10	12	14
y	-24	-32	-40	-48	-56

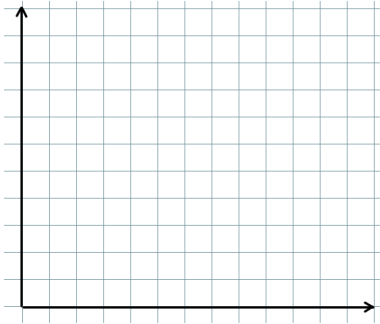
17.

x	2	4	6	8	10
y	5	2.5	1.7	1.25	1

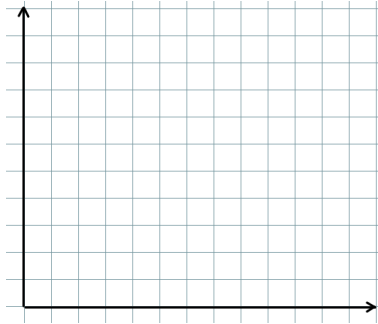
Table	Direct/Inverse	$k =$	Equation
#16			$y =$
#17			$y =$

Sketch the graph of each direct/Inverse function:

18. $y = \frac{9}{x}$



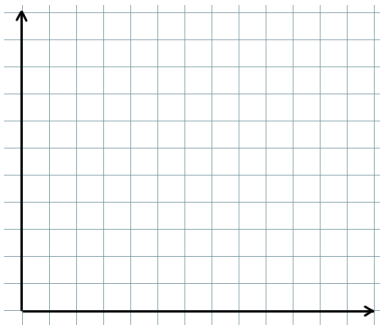
19. $y = -3x^2$



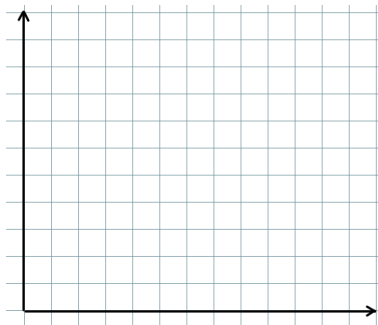
20. $y = 4x^3$



21. $y = \sqrt{x}$



22. $y = \frac{1}{x^2}$



23. If y varies inversely as x and $y = 4$ when $x = 2$, find y when $x = -14$.
24. If y varies directly as x and $y = 24$ when $x = -4$, find x when $y = 42$.
25. If y varies directly as x^2 and $y = 27$ when $x = 3$, find y when $x = 12$.

Use the following to answer questions 26 and 27.

The number of goals scored (g) by a soccer team is directly proportional to the shots on goal (s). The Lakeside Bears scored two goals after 24 shots on goal.

26. Write a direct variation rule to represent the situation.
27. If the Bears have 96 shots on goal how many goals will they score?
28. y varies directly as x and inversely as z , and has a constant of 5. Write an equation to represent the situation.
29. Variable D varies directly with the \sqrt{w} . If D is 117 when $w = 81$, find w when $D = 728$.
- a) $m = 25$ b) $m = 17.9$ c) $m = 3.6$ d) $m = 22$

Use the following to answer questions 30 – 31.

The volume V of a gas varies inversely as the pressure P on it. The volume is 240 cm^3 under pressure of 30 kg/cm^2 .

30. Write an inverse variation equation that models the situation.
31. What pressure has to be applied to have a volume of 160 cm^3 .

32. Supposed x varies jointly with y and the square root of z . When $x = -18$ and $y = 2$, then $z = 9$. Find y when $x = 10$ and $z = 4$.

33. y varies jointly as x and w and inversely as the square of z . Find the equation of variation when $y = 100$, $x = 2$, $w = 4$, and $z = 20$. Then solve for y when $x = 1$, $w = 5$, and $z = 4$.

True/False

_____ 34. Inverse variations graphs a straight line though the origin.

_____ 35. The following table represents inverse variation.

x	1	2	3	6	8	9
y	2.5	5	7.5	15	20	22.5

_____ 36. The area of a circle is inversely related to the square of its radius. ($A = \pi r^2$)

_____ 37. Combined variation is when direct and inverse variations occur together.

_____ 38. If y varies inversely as x^n , then n can be a negative value.

Simplify. Write with positive exponents. Circle your final answer.

39. $(6x^2y^5)(-4xy^5)$

40. $\frac{24x^5y^2}{12x^2y^3}$

41. $(-3x^3y^3)^3$

42. $(-3x^4)^5(2x^3)^4$

43. $\frac{(5x^3y^7)(8x^3y^5)}{10x^{10}y^2}$