TRIM

1

x	y
0	4
3	1
6	⁻2

Which equation *most* likely describes the relation indicated by the table?

F $y = x + 4$
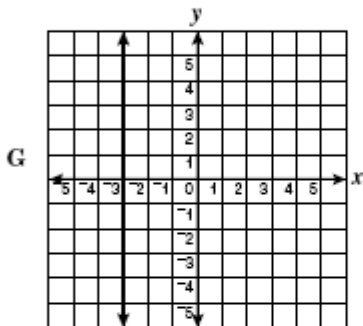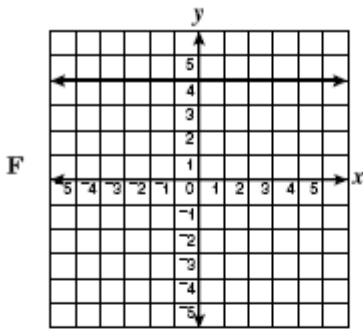
G $y = x - 2$

H $y = ⁻x + 4$

J $y = ⁻x - 8$

2

x	⁻6	2	10
y	1	3	5

Which equation is satisfied by all the points in the table?

F $x - 4y = 10$

G $4y - x = 10$

H $7y - x = 20$

J $x - 7y = 20$

3 If a varies directly as b and $a = 3$ when $b = 12$, what is the value of a when $b = 18$?

4 The gas pressure in a chamber varies directly with the temperature in the chamber. If the pressure in the chamber is 150 atmospheres (atm) when the chamber is at 50°F, what is the pressure in the chamber when the temperature of the chamber is 75°F?

5 Trina's paycheck earnings, p, varies directly as the number of hours, h, she works. If she works 19 hours and earns $187.15, what should she earn if she worked 40 hours?

A $394.00

B $443.25

C $472.80

D $512.20

6 Which of these equations is a direct variation?

F $y = ⁻8$

G $y = ⁻8x$

H $y = ⁻8x + 1$

J $y = ⁻8x - 1$

7 If m varies directly as p, and $m = 5$ when $p = 7$, what is the constant of variation?

A 35

B 12

C $\dfrac{7}{5}$

D $\dfrac{5}{7}$

8. If y varies directly as x and the constant of variation is -2, write an equation that represents this relationship.
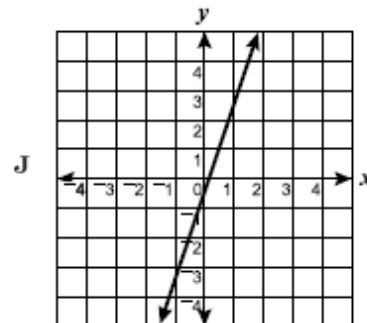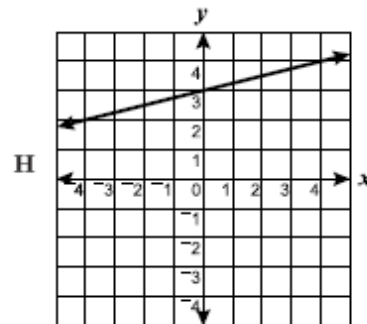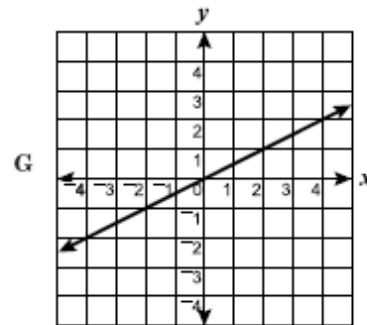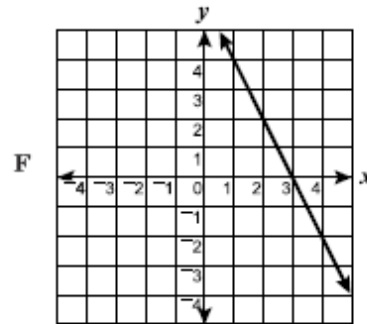
9   **In which graph is _y_ a direct variation of _x_?**

F

G

H

J
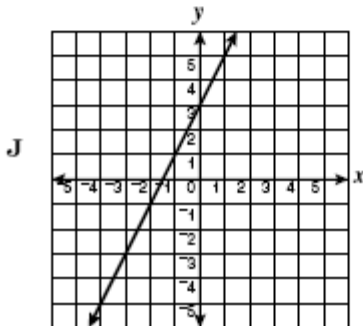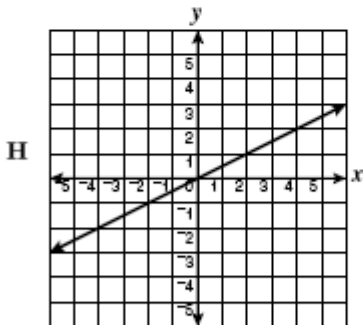
10

x	1	4	3
y	4	⁻2	0

Which graph appears to contain all the points in the table?

F

G

H

J

11 The chart shows how the wholesale price of an item, p, depends on the cost of the materials needed to produce the item, m. Which equation represents this linear relationship?

m	$0.50	$1.00	$1.50	$2.00
p	$4.00	$5.00	$6.00	$7.00

A $p = m + 3.5$

B $p = 2m + 3$

C $p = 3m + 2.5$

D $p = 4m + 2$

12. The table shows the relationship between a, the area of a rectangle, and h, its height, when the base remains constant.

h	2	5	7	12
a	8	20	28	48

Which equation represents the relationship between h and a?

F $a = h + 6$

G $a = 3h + 2$

H $a = 4h$

J $a = 2h + 4$

13 The table below shows the relation between the number of members in a club selling cookies and the predicted number of boxes sold.

Club Cookie Sales

Number of Members, g	Number of Boxes Sold, b
5	350
10	650
15	950
20	1,250

Using the data shown above, which equation could be used to predict the number of boxes of cookies that the club will sell?

F $b = 60g$

G $b = 70g$

H $b = 60g + 50$

J $b = 50g + 50$

14 In which table are all the points represented by the equation $y = \dfrac{^-x}{4} + 2?$

F

x	0	2	6	8
y	2	1	$\frac{1}{2}$	0

G

x	0	4	6	8
y	2	1	$\frac{1}{2}$	0

H

x	0	4	6	8
y	2	1	0	$^-1$

J

x	0	2	4	6
y	2	1	0	$^-\frac{1}{2}$

15. The following chart used to calculate the price, P, in cents per color brochure for a certain bulk number of brochures, n, ordered by a company.

n	100	500	1,000	2,000
P	49	45	40	30

Which equation best represents this relationship?

A $P = \left(\dfrac{-1}{100}\right)n + 50$

B $P = \left(\dfrac{1}{10}\right)n + 39$

C $P = \left(\dfrac{-1}{10}\right)n + 59$

D $P = \left(\dfrac{1}{100}\right)n + 48$

pt

16 In which table of ordered pairs does n vary directly as m?

F
m	n
$^-2$	$^-1$
$^-1$	$^-2$
1	2

G
m	n
$^-2$	4
$^-1$	2
1	$^-2$

H
m	n
$^-2$	$^-2.5$
$^-1$	$^-5.0$
1	5.0

J
m	n
$^-2$	$^-2$
$^-1$	$^-4$
1	4

17 In the table, y varies directly with x.

x	10	15	20	25
y	6	9	12	15

Which equation best describes the data?

F $xy = \dfrac{5}{3}$

G $xy = \dfrac{3}{5}$

H $y = \dfrac{5}{3}x$

J $y = \dfrac{3}{5}x$

18

x	y
1	$0.05
2	$0.10
3	$0.15
4	$0.20
5	$0.25

Which is an equation for the variation that includes all the data in the table?

F $xy = 0.05$

G $y = x + 0.05$

H $y = 0.05x$

J $y = \dfrac{x}{0.05}$

19. In kickboxing, a study was conducted to measure the force (F) needed to break a board relative to the length of the board (L) . It takes 5 lbs of force to break a board 2 feet long. It takes $1\frac{2}{3}$ lbs to break a board 6 feet long. Which statement is true about this relationship?

    A) The force directly with the length of the board because $F = 2.5L$.

    B) The force varies directly with the length of the board because $FL = 10$.

    C) The force varies inversely with the length of the board because $F = 2.5L$.

    D) The force varies inversely with length of the board because $FL = 10$.

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20. The pressure (P) in a tire varies directly with the temperature (T). At a temperature of 50^0F, the pressure is 30 pounds per square inch. Which equation correctly models this?

    A) $P = \frac{1500}{T}$ **B)** $P = \frac{5}{3}T$ **C)** $P = \frac{3}{5}T$ **D)** $PT = 1500$

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21. A farmer collected the data given in the table shown below.

- **Let x represent amounts of fertilizer in pounds/100 ft^2 used**

- **Let y represent crop yields in bushels.**

Fertilizer (x)	0	5	10	15	20	25	30	35	40
Crop yield (y)	6	7	10	17	21	21	22	20	19

Find the equation of the curve that best fits the data.
A) $y = 0.40x + 7.96$
B) $y = -0.07x^2 + 3.85x - 20.03$
C) $y = 1.81x - 8.75$
D) $y = -0.02x^2 + 1.15x + 3.58$

22. The table shows the cost to rent a jet ski for different numbers of hours.

Number of Hours	Cost to rent jet ski
1	$46.50
2	$63.00
3	$79.50
4	$96.00

Which equation gives *C*, the cost to rent a jet ski for *h* hours?

A) $C = 16.5h$ **B)** $C = 24h$ **C)** $C = 30 + 16.5h$ **D)** $C = 30 - 16.5h$

23. Old Faithful is a geyser in Yellowstone National Part. The table below shows the duration of the eruption and the time until the next eruption of Old Faithful for a selected day.

Duration (minutes)	3.9	4	4.1	3.5	2.3	1.7	4.7
Time until next Eruption (minutes)	74	68	76	80	58	55	93

Assuming a linear relationship between the duration and time until the next eruption, predict the time until the next eruption when the duration is 4.5 minute.

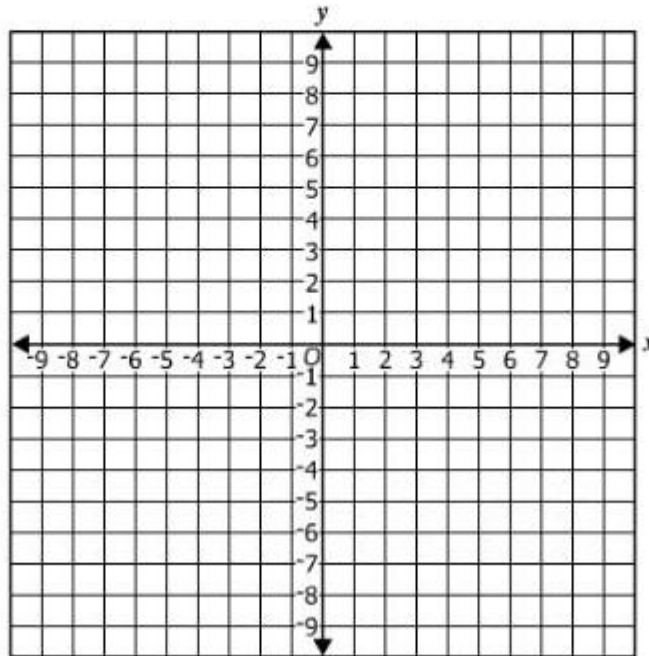**A)** 108 minutes   **B)** 98 minutes   **C)** 83.5 minutes   **D)** 72.0 minutes

SOL Lesson 4 Practice   Name _____
Eqn to Tbl, Variations   Date _____

A function is represented by this rule.

One more than one-fourth the square of a number x is y.

Plot three points on the grid that are represented by this rule. Each point must have coordinates that are integers.

24.

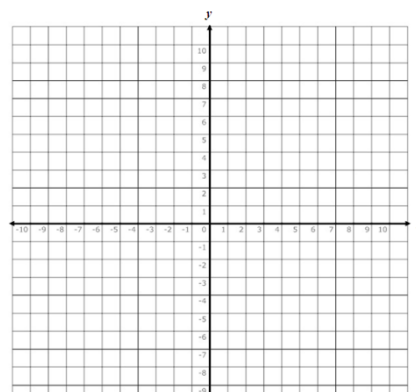25. Determine the quadratic curve of best fit for the data.(2pts each)

$\{(-3,2),(0,5),(1,7.3),(-1,3.3),(-6,5),(-7,7.3)\}$ $y =$ _____

26. Using your equation, estimate the value of y when x = -4. $y =$ _____

27. Circle three of these points that will create a relation that is a direct variation.

$(1,10)$ $(3.5,7)$ $(4,8)$ $(8,4)$ $(8,16)$ $(10,6)$

28. Point A (-3,3) lies on a line that represents a direct variation equation. Plot three other points on that line.

29. This chart shows how the cost per person to rent a vacation home varies with the number of people in a group.

Cost Per Person to Rent a Vacation Home

Number of People in Group	Cost Per Person ($)
5	530.00
8	331.25
10	265.00
20	132.50

Which statement is true about the relationship?

    a) It is a direct variation relationship because $y = 2650x$.

    b) It is a direct variation relationship because $y = \dfrac{2650}{x}$.

    c) It is an inverse variation relationship because $y = 2650x$.

    d) It is an inverse variation relationship because $y = \dfrac{2650}{x}$.