Green

Points	Problem	Solve for x. Check your answer to make sure you are correct!
1	A	$\dfrac{x}{2} - 9 = -1$
2	B	$-\dfrac{2}{3}x + 4 = -66$
2	C	$\dfrac{4x}{5} - 12 = -32$
2	D	$-\dfrac{3}{4}(2x + 5) = 6$
3	E	$5 = -\dfrac{2}{3}(2x - 6) - 3$
3	F	$-3(2x - 5) = 6x - 15$
3	G	$-\dfrac{2}{3}(6 - 2x) = 6 - x$
4	H	$x - 12 = \dfrac{5x + 2}{3}$
4	I	$\dfrac{2x - 5}{5} - 3 = 3x + 4$
5	J	$\dfrac{1}{4}(3x - 9) = \dfrac{3}{2}(x + 6)$

Problem		Answers
A	x = 16	$\frac{x}{2} - 9 = -1$
B	x = 105	$-\frac{2}{3}x + 4 = -66$
C	x = -25	$\frac{4x}{5} - 12 = -32$
D	x = -13/2	$-\frac{3}{4}(2x + 5) = 6$
E	x = -3	$5 = -\frac{2}{3}(2x - 6) - 3$
F	x = 5/2	$-3(2x - 5) = 6x - 15$
G	x = 30/7	$-\frac{2}{3}(6 - 2x) = 6 - x$
H	x = -19	$x - 12 = \frac{5x + 2}{3}$
I	x = -40/13	$\frac{2x - 5}{5} - 3 = 3x + 4$
J	x = -15	$\frac{1}{4}(3x - 9) = \frac{3}{2}(x + 6)$

Green

Answers

Orange

Points	Problem	Write the equation of the line containing the two points listed.
1	A	(12 , 10) and (12 , 5)
2	B	(-5 , 4) and (4 , -23)
2	C	(4 , 9) and (-2 , 9/2)
3	D	(-3 , 0) and (1 , -6)
3	E	(1 , -5) and (10 , 23/2)
3	F	(-1 , -2) and (2 , 6)
3	G	(-1 , -1) and (4 , 3)
3	H	(6 , -4) and (-1 , 2)
4	I	(-1 , 10) and (12 , -4)
5	J	(1/4 , 2) and (-5 , 2/3)

Answers

Problem		
A	$x = 12$	(12 , 10) and (12 , 5)
B	$y = -3x - 11$	(-5 , 4) and (4 , -23)
C	$y = \dfrac{3}{4}x + 6$	(4 , 9) and (-2 , 9/2)
D	$y = -\dfrac{3}{2}x - \dfrac{9}{2}$	(-3 , 0) and (1 , -6)
E	$y = \dfrac{11}{6}x - \dfrac{41}{6}$	(1 , -5) and (10 , 23/2)
F	$y = \dfrac{8}{3}x + \dfrac{2}{3}$	(-1 , -2) and (2 , 6)
G	$y = \dfrac{4}{5}x - \dfrac{1}{5}$	(-1 , -1) and (4 , 3)
H	$y = -\dfrac{6}{7}x + \dfrac{8}{7}$	(6 , -4) and (-1 , 2)
I	$y = -\dfrac{14}{13}x + \dfrac{116}{13}$	(-1 , 10) and (12 , -4)
J	$y = \dfrac{16}{63}x + \dfrac{122}{63}$	(1/4 , 2) and (-5 , 2/3)

Blue

Points	Problem	Determine whether the relationship between x and y is linear or nonlinear. Write an equation for the relationship if it is linear. If the relationship is nonlinear explain how you know.			
1	A	x	15	17	21	23
		y	62	47	17	2
1	B	x	1	2	4	7
		y	24	21	18	15
2	C	x	5	-5	-13	-21
		y	-2	3	7	11
2	D	x	20	24	30	36
		y	18	15	12	10
3	E	x	2	2	2	2
		y	-5	-1	7	20
3	F	x	10	20	30	40
		y	4	16	28	48
4	G	x	560	460	260	−140
		y	3	5	9	17
4	H	x	-10	-5	5	10
		y	$\frac{44}{7}$	$\frac{23}{7}$	$\frac{-19}{7}$	$\frac{-40}{7}$
5	I	x	30	45	51	171
		y	115	110	108	68
5	J	x	20	41	48	62
		y	24	12	8	0

Answers

Problem		Answers			
A	**Linear** $y = -\dfrac{15}{2}x + \dfrac{349}{2}$	x	15	17	21	23
		y	62	47	17	2
B	**Nonlinear**	x	1	2	4	7
		y	24	21	18	15
C	**Linear** $y = -\dfrac{1}{2}x + \dfrac{1}{2}$	x	5	-5	-13	-21
		y	-2	3	7	11
D	**Nonlinear**	x	20	24	30	36
		y	18	15	12	10
E	**Linear** $x = 2$	x	2	2	2	2
		y	-5	-1	7	20
F	**Nonlinear**	x	10	20	30	40
		y	4	16	28	48
G	**Linear** $y = -.02x + 14.2$	x	560	460	260	−140
		y	3	5	9	17
H	**Linear** $y = -\dfrac{3}{5}x + \dfrac{2}{7}$	x	-10	-5	5	10
		y	$\dfrac{44}{7}$	$\dfrac{23}{7}$	$\dfrac{-19}{7}$	$\dfrac{-40}{7}$
I	**Linear** $y = -\dfrac{1}{3}x + 125$	x	30	45	51	171
		y	115	110	108	68
J	**Linear** $y = -\dfrac{4}{7}x + \dfrac{248}{7}$	x	20	41	48	62
		y	24	12	8	0

Points	Problem	Two-Way Tables
1	A	High school parents and coaches were surveyed about whether competitive sports are important in school. What does 120 represent in the table? <table><tr><td></td><td colspan="3">Role</td></tr><tr><td></td><td>Parent</td><td>Coach</td><td>Total</td></tr><tr><td>Yes</td><td>880</td><td>456</td><td>1336</td></tr><tr><td>No</td><td>120</td><td>45</td><td>165</td></tr><tr><td>Total</td><td>1000</td><td>501</td><td>1501</td></tr></table> (Important)

Problem A table:

	Role		
	Parent	Coach	Total
Yes	880	456	1336
No	120	45	165
Total	1000	501	1501

(row label: Important)

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2 — B

A deli offers two types of bread and three types of meat for sandwiches. The two-way table shows the relative frequency of some types of sandwiches sold one Saturday afternoon. Complete the table. Make sure to show ALL work.

	Turkey	Ham	Salami	Totals
White Bread		20		44
Wheat Bread	14			36
Totals	28	32	20	80

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3 — C

True or False, students aged 10-13 are less than half as likely to skip breakfast than students aged 14-17

	Eat Breakfast	Skip Breakfast
Students: ages 10-13	40	14
Students: ages 14-17	12	24

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3 — D

What is your favorite sport to watch on television?

	Football	Basketball	Baseball
Males	40	22	15
Females	12	16	45
Total	52	38	60

Suppose a larger group of 1000 people were surveyed next. According to the results in the table how many females could we expect to choose football.

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3 — E

What percentage of people surveyed speak only French?

	French	Not French	Total
Spanish	5	63	68
Not Spanish	30	2	32
Total	35	65	100

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4 — F

True or False. Women are more likely to drive a sports car than men.

	Sport Utility Vehicle (SUV)	Sports Car	Totals
male	21	39	60
female	135	45	180
Totals	156	84	240

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4 — G

An outdoor club conducted a survey of its members. The members were asked to state their preference between skiing and snowboarding. Each member had to pick one. Of the 60 males, 45 stated they preferred to snowboard. 22 of the 60 females preferred to ski. What is the relative frequency that a male prefers to ski?

Yellow

Problem	Two-Way Tables

A

		Role		
		Parent	**Coach**	**Total**
Important	**Yes**	880	456	1336
	No	120	45	165
	Total	1000	501	1501

120 high school parents believe competitive sports are not important in school.

B

	Turkey	Ham	Salami	Totals
White Bread	**14**	20	**10**	44
Wheat Bread	14	**12**	**10**	36
Totals	28	32	20	80

C

True. Of students aged 10-13, 14 (students skipping breakfast)/54 (total 10-13 year olds) = 0.26 compared to the 14-17 year olds 24 (skipping breakfast)/36 (total 14-17 year olds) = 0.67
0.26/0.67 = 39% which is less than half.

	Eat Breakfast	Skip Breakfast
Students: ages 10-13	40	14
Students: ages 14-17	12	24

D

What is your favorite sport to watch on television?

	Football	Basketball	Baseball
Males	40	22	15
Females	12	16	45
Total	52	38	60

About 80 women; 12 women out of 150 total people chose football as their favorite sport to watch. If there were 1000 total people, 12/150 = x/1000. Solving for x, x = 80.

E

	French	Not French	Total
Spanish	5	63	68
Not Spanish	30	2	32
Total	35	65	100

30%, since 30 people speak French but not Spanish out of 100 total people surveyed and 30/100 = 30%

F

	Sport Utility Vehicle (SUV)	Sports Car	Totals
male	21	39	60
female	135	45	180
Totals	156	84	240

False. Women are less likely to drive sports cars since 45 (females driving sports cars)/180 (total) = 0.25 compared to men 39 (men driving sports cars)/60 (total) = 0.65

G

15 males prefer skiing out of a total of 120 members of the club.
(15/120) x 100 = 12.5%