## Warm Up

Each part of an equation tells the "story" about a situation.

Using the equation we got last week for attendance at Get Reel, tell what all the variables and numbers mean in the context of the problem.

x
y

Probability of Rain (%)	0	20	40	60	80	100
Get Reel Attendance	300	340	380	420	460	500

probability of rain

300 people will attend when the probability of rain = 0

$$A_{Reel} = 2p + 300$$

Attendance at Get Reel for "p" probability of rain

for every 1% increase in the probability of rain 2 more people will come

$$Slope = 2 = \frac{\Delta y}{\Delta x} = \frac{\# \text{ of people attending}}{1\% \text{ increase in prob. of rain}}$$

What do the parts of the equation tell us about the attendance at Big Fun?

Probability of Rain (%)	0	20	40	60	80	100
Big Fun Attendance	1,000	850	700	550	400	250

$\frac{\Delta y}{\Delta x} = \frac{Attendance}{prob.\ of\ rain}$

probability of rain

When probability of rain = 0, there will be 1000 people.

$$A_F = -7.5p + 1000$$

Attendance at Big Fun for "p" probability of rain.

with each 1% increase in the probability of rain 7.5 fewer people will attend.

2.5 Recap - We have lots of questions to answer.

(B) Use your functions from Question A to answer these questions. Show your calculations and explain your reasoning.

1. Suppose there is a 50% probability of rain this Saturday. What is the expected attendance at each attraction?

2. Suppose 475 people visited Big Fun one Saturday. Estimate the probability of rain on that day.

3. What probability of rain gives a predicted Saturday attendance of at least 360 people at Get Reel?

4. Is there a probability of rain for which the predicted attendance is the same at both attractions?

5. For what probability of rain is attendance at Big Fun likely to be greater than at Get Reel?

6. For what probability of rain is attendance at Big Fun likely to be less than at Get Reel?

Our equations can be used to answer
each of these questions! *That's why we
make them!*

1. Suppose there is a 50% probability of rain this Saturday. What is the
expected attendance at each attraction?

$A_F = -7.5p + 1000$ $A_R = 2p + 300$

$A_F = -7.5(50) + 1000$ $A_R = 2(50) + 300$

$A_F = -375 + 1000$ $A_R = 100 + 300$

$A_F = 625$ $= 400$

625 people will attend
Big Fun if prob. of rain = 50%

400 people will attend
Get Reel if 50% prob. of
rain

2. Suppose 475 people visited Big Fun one Saturday. Estimate the
probability of rain on that day.

$A_F = -7.5p + 1000$

$475 = -7.5p + 1000$

$-1000 \qquad\qquad -1000$

$\overline{}$

$\dfrac{-525}{-7.5} = \dfrac{-7.5p}{-7.5}$

$70 = P$

If 475 people
attended, the prob.
of rain was ~ 70%

3. What probability of rain gives a predicted Saturday attendance of at
least 360 people at Get Reel?

$A_R = 2p + 300$

$360 = 2p + 300$

$-300 \qquad\qquad -300$

$\overline{}$

$\dfrac{60}{2} = \dfrac{2p}{2}$

$30 = P$

30% prob. of
rain if 360 people
attend

4. Is there a probability of rain for which the predicted attendance is the same at both attractions?

these are equal

$A_F = -7.5p + 1000$ $A_R = 2p + 300$

$$-7.5p + 1000 = 2p + 300$$
$$-1000 -1000$$
$$\overline{}$$
$$-7.5p = 2p - 700$$
$$-2p -2p$$
$$\overline{}$$
$$\frac{-9.5p = -700}{-9.5 -9.5}$$
$$P = 73.7$$

The attendance are the same if prob. of rain = 73.7 %

5. For what probability of rain is attendance at Big Fun likely to be greater than at Get Reel?

When the probability of rain is < 73.7%

6. For what probability of rain is attendance at Big Fun likely to be less than at Get Reel?

When p > 73.7%

Classwork

Finish up the packet

Algebra 8 TWMM Review

Write the equation for the lines shown in the graphs below.

A
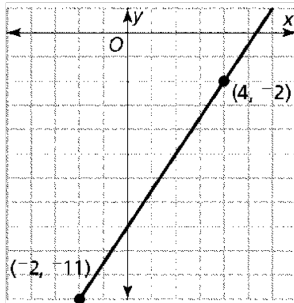
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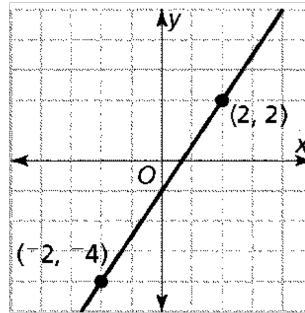
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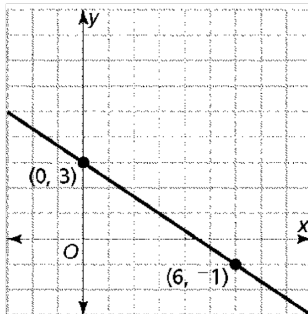
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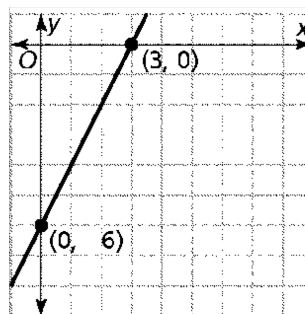
E
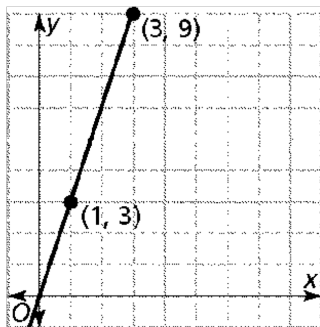
F
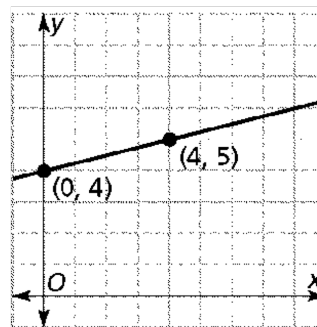
Determine whether the relationship between x and y is linear or not. If it is linear, write the equation. If it is not linear, explain how you know.

G

x	2	4	6	8
y	21	16	12	7

H

x	1	2	4	6
y	15	19	27	35

I

x	1	2	3	4
y	16	24	32	40

J

x	5	-5	-13	-21
y	-2	3	7	11

K

x	3	6	9	15
y	2	3	4	6

L

x	1	2	3	4
y	2	4	8	16

M

x	2	3	4	5
y	15	17	19	21

N

x	2	4	6	8
y	17	29	41	53

O

x	-4	-2	2	4
y	6	10	18	22

P

x	3	6	9	15
y	8	7	6	5

Q

x	7	25	30	37
y	-2	-2	-2	-2

R

x	1	3	5	7
y	10	7	4	1

Write the equation of the line given the following conditions:

S passes through the points (2, 7) and (6, 15)	**T** with slope −2 that passes through the point (3, −9)
U passes through the points (2, −9) and (−2, 3)	**V** with slope $\frac{3}{2}$ that passes through the point (−2, 0)
W passes through the points (4, 1) and (-2, 4)	**X** with slope $\frac{2}{3}$ that passes through the point (6, 2)
Y passes through the points (2, 1) and (6, 9)	**Z** with slope -4 that passes through the point (−7, 5)
a with slope = $\frac{1}{2}$ that passes through the point (-10, 7)	**b** passes through the points (2, -11) and (-5, 10)
c passes through the points (8, 2) and (-2, 7)	**d** passes through the points (-2, 2) and (3, -2)

Homework

Finish Review Packet