

Movie Choices & Friendly Advice

Name:

Problem: If your partner likes a movie, should you try to watch it?

Plan: Take a list of current movies. Rank them and find the correlation co-efficient.

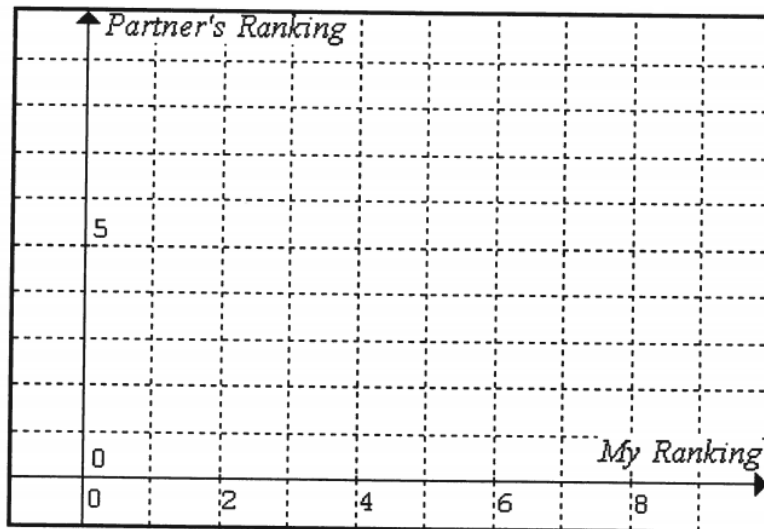
Data:

- How much do you want to see each movie? Rank each from 1 (worst) to 10 (best), using each number once.
- Get your partner to rank it separately. Record their answer in the second column.

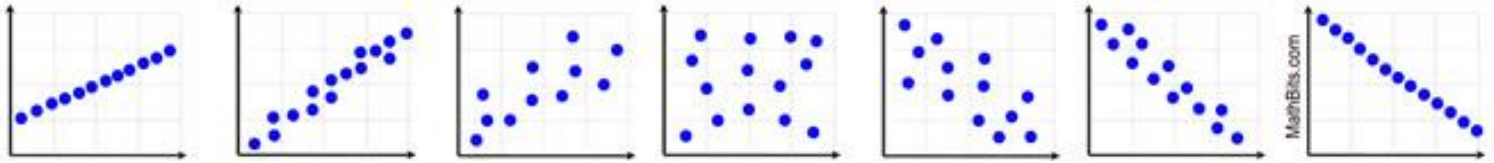
You	Partner	Movie
		Joker - Arthur Fleck (Joaquin Phoenix) is a man struggling to find his way in Gotham's fractured society.
		Gemini Man - An action-thriller starring Will Smith as an elite assassin, who is suddenly targeted and pursued by a mysterious young operative that seemingly can predict his every move.
		Addams Family - The first family of Halloween is back on the big screen in the first animated comedy about the kookiest family on the block.
		Abominable - When teenage Yi encounters a young Yeti on the roof of her apartment building in Shanghai, she and her mischievous friends, embark on an epic quest to help him.
		Maleficent II - Maleficent and Aurora begin to question the family ties that bind them as they are pulled in different directions by impending nuptials, unexpected allies and dark new forces.
		Downton Abbey - A royal visit from the King and Queen of England will unleash scandal, romance and intrigue that will leave the future of Downton hanging in the balance.
		IT: Chapter Two - Twenty-seven years after the Losers Club defeated Pennywise, he has returned to terrorize the town of Derry once more.
		Judy - Winter 1968 and showbiz legend Judy Garland arrives in Swinging London to perform a five-week sold-out run at The Talk of the Town.
		Jexi - When Phil (Adam Devine) is forced to upgrade his phone, the latest model comes with an unexpected feature, Jexi -- an A.I. life coach, virtual assistant and cheerleader.
		The Peanut Butter Falcon - Zak, a young man with Down syndrome, who runs away from a residential nursing home to follow his dream of attending the professional wrestling school of his idol.

Analysis:

- Plot each ranking in the form (Yours, Partners) as an (x, y) co-ordinate.
- Draw in a Line of Best Fit



- Look at the following sequence of graphs. Circle the one which best matches yours:



$r = 1$	$r = 0.8$ (approx.)	$r = 0.6$ (approx.)	$r = 0$	$r = -0.6$	$r = -0.8$ (approx.)	$r = -1$ (approx.)
Perfect line	Not so perfect	Even less perfect	Big blob	Not so perfect	More perfect	Perfect line
Positive slope	Positive slope	Positive slope	No slope	Negative slope	Negative slope	Negative slope
If you like it, so does your partner	If you like it, your partner probably does too.	If you like it, your partner might too	If you like it, you have no idea if your partner does	If you like it, your partner might not	If you like it, your partner probably does not	If you like it, your partner does not
Your value predicts your partners'	Your value sort of predicts your partners'	Your value rarely predicts your partners'	Your value has no relation to your partners'	The opposite of your value rarely predicts your partners'	The opposite of your value sort of predicts your partners'	The opposite of your value predicts your partners'

Conclusions:

(a) What is your estimate for the r value?

(b) What kind of slope did you have?

(c) If your partner likes a movie, should you go see it? Explain.

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(d) If your partner dislikes a movie, should you go see it? Explain.

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(e) Explain one reason that we only established correlation and not full causation in this experiment.

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(f) [Multiple choice - circle the best answer] A study found a correlation of $r = -0.61$ between the gender of a worker and their income. You can conclude that:

- Women earn more than men on average
- Women earn less than men on average
- An arithmetic mistake was made; this is not a possible value of r.
- This is nonsense because r makes no sense here.
- The correlation of -0.61 is not meaningful here because the relationship between gender and income is likely non-linear.