

Algebra 1
Conditional Relative Frequency

Conditional Relative Frequency | A1-U10-P16

96 problems · Four activity formats

01	Answer Bank Challenge	24 tasks
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Topic focus
Across 96 tasks this topic asks for conditional frequency with named reference group.
8 PDFs and a README; 82 buyer pages.

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Name: _____ Date: _____ Class: _____

Answer each question and record the matching bank letter. Give exact values. Give the whole requested response, including any reasoning the question asks for.

Use a library reminder experiment: reminder by return; email: on time=26, late=14; paper: on time=15, late=15. among email, what proportion are late? Give a fraction and percent, and name the subgroup total used as denominator.

reminder by return (counts)

reminder	on time	late	Total
email	26	14	40
paper	15	15	30
Total	41	29	70

Bank label: _____

Use a library reminder experiment: reminder by return; email: on time=26, late=14; paper: on time=15, late=15. among on time, what proportion are paper? Give a fraction and percent, and name the subgroup total used as denominator.

reminder by return (counts)

reminder	on time	late	Total
email	26	14	40
paper	15	15	30
Total	41	29	70

Bank label: _____

Use a music-class practice poll: instrument group by practice goal; strings: reached=33, missed=7; winds: reached=24, missed=16. among strings, what proportion are missed? Give a fraction and percent, and name the subgroup total used as denominator.

instrument group by practice goal (counts)

instrument group	reached	missed	Total
strings	33	7	40
winds	24	16	40
Total	57	23	80

Bank label: _____

Use a music-class practice poll: instrument group by practice goal; strings: reached=33, missed=7; winds: reached=24, missed=16. among reached, what proportion are winds? Give a fraction and percent, and name the subgroup total used as denominator.

instrument group by practice goal (counts)

instrument group	reached	missed	Total
strings	33	7	40
winds	24	16	40
Total	57	23	80

Bank label: _____

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Name: _____ Date: _____ Class: _____

Answer each question and show your reasoning in the workspace. Give exact values rather than decimals unless the question supplies a decimal. Give the whole requested response, including any reasoning the question asks for.

Use a mentoring-program review: meeting format by goal status; online: met=18, not met=12; in person: met=28, not met=12. among online, what proportion are not met? Give a fraction and percent, and name the subgroup total used as denominator.

meeting format by goal status (counts)

meeting format	met	not met	Total
online	18	12	30
in person	28	12	40
Total	46	24	70

Use a mentoring-program review: meeting format by goal status; online: met=18, not met=12; in person: met=28, not met=12. among met, what proportion are in person? Give a fraction and percent, and name the subgroup total used as denominator.

meeting format by goal status (counts)

meeting format	met	not met	Total
online	18	12	30
in person	28	12	40
Total	46	24	70

Use a transit-pass survey: pass type by commute result; monthly: on time=24, late=6; single ride: on time=18, late=12. among monthly, what proportion are late? Give a fraction and percent, and name the subgroup total used as denominator.

pass type by commute result (counts)

pass type	on time	late	Total
monthly	24	6	30
single ride	18	12	30
Total	42	18	60

Use a transit-pass survey: pass type by commute result; monthly: on time=24, late=6; single ride: on time=18, late=12. among on time, what proportion are single ride? Give a fraction and percent, and name the subgroup total used as denominator.

pass type by commute result (counts)

pass type	on time	late	Total
monthly	24	6	30
single ride	18	12	30
Total	42	18	60

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Begin at START. Answer the card, then find the matching final answer at the top of another card. Use the recording sheet for your reasoning. Visit each card once and continue to FINISH.

Incoming: For a delivery-window review: First conditional rate: $\frac{3}{5}$ (60.0%). Reversed conditional rate: $\frac{8}{17}$ (47.06%).

From a museum-ticket survey, ticket by tour; member: joined=12, not joined=8; visitor: joined=18, not joined=42. Compare 'among member, the share that are joined' with 'among joined, the share that are member.' Compute both or mark an undefined condition, then explain the denominator change.

ticket by tour (counts)

ticket	joined	not joined	Total
member	12	8	20
visitor	18	42	60
Total	30	50	80

Your response: _____

Incoming: context: a follow-up clinic audit; denominator: 40; given: text; numerator: 32; target: replied

In a tutoring attendance study, translate the statement 'among improved, the share that are morning' into a precise conditional statement. Name the target category, the given reference group, and the subgroup denominator; do not reverse them.

session by assessment (counts)

session	improved	unchanged	Total
morning	21	9	30
evening	16	24	40
Total	37	33	70

Your response: _____

Incoming: For a coding-club challenge log: First conditional rate: $\frac{9}{10}$ (90.0%). Reversed conditional rate: $\frac{3}{7}$ (42.86%).

From a pilot survey with no evening respondents, survey time by choice; evening: option A = 0, option B = 0; daytime: option A = 12, option B = 8. Compare 'among evening, the share that are option A' with 'among option A, the share that are evening.' Compute both or mark an undefined condition, then explain the denominator change.

survey time by choice (counts)

survey time	option A	option B	Total
evening	0	0	0
daytime	12	8	20
Total	12	8	20

Your response: _____

Incoming: For a produce-inspection report: First conditional rate: $\frac{19}{20}$ (95.0%). Reversed conditional rate: $\frac{38}{83}$ (45.78%).

From a library reminder experiment, reminder by return; email: on time=26, late=14; paper: on time=15, late=15. Compare 'among email, the share that are on time' with 'among on time, the share that are email.' Compute both or mark an undefined condition, then explain the denominator change.

reminder by return (counts)

reminder	on time	late	Total
email	26	14	40
paper	15	15	30
Total	41	29	70

Your response: _____

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Evaluate the supplied statement or method. Say whether it is correct, repair it if it is not, and verify the result exactly. Not every prompt contains an error.

From a mentoring-program review, meeting format by goal status; online: met= 18, not met= 12 ; in person: met= 28, not met= 12 . Compare 'among online, the share that are met' with 'among met, the share that are online.' Compute both or mark an undefined condition, then explain the denominator change.

meeting format by goal status (counts)

meeting format	met	not met	Total
online	18	12	30
in person	28	12	40
Total	46	24	70

From a transit-pass survey, pass type by commute result; monthly: on time= 24, late= 6 ; single ride: on time= 18, late= 12 . Compare 'among monthly, the share that are on time' with 'among on time, the share that are monthly.' Compute both or mark an undefined condition, then explain the denominator change.

pass type by commute result (counts)

pass type	on time	late	Total
monthly	24	6	30
single ride	18	12	30
Total	42	18	60

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Full Worked Solutions - excerpt

Worked example

Problem. Design a two-by-two count table for two device groups with subgroup totals 30 and 45: make the first group's exact target rate 33%. Give target and complement counts, or prove integer impossibility, and verify both row totals.

Group	target outcome	Complement	Given subgroup total
group one	_____	_____	30
group two	_____	_____	45

Answer. For two device groups: Impossible with integer counts for subgroup totals 30 and 45.

Explanation and check.

An exact 33% of 30 would require $\frac{99}{10}$ observations, which is not an integer; therefore no count table can meet the condition.

Worked example

Problem. Design a two-by-two count table for two membership groups with subgroup totals 28 and 35: make the first group's exact target rate 45%. Give target and complement counts, or prove integer impossibility, and verify both row totals.

Group	target outcome	Complement	Given subgroup total
group one	_____	_____	28
group two	_____	_____	35

Answer. For two membership groups: Impossible with integer counts for subgroup totals 28 and 35.

Explanation and check.

An exact 45% of 28 would require $\frac{63}{5}$ observations, which is not an integer; therefore no count table can meet the condition.