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Information and Knowledge Management

Module: IN2105

Date: Friday 19th February, 2021

Examiner: Prof. Dr. Helmut Krcmar

Exam: Endterm

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Last update:

Wednesday 10th March, 2021

Σ (Endterm)	Grade (Endterm)	Grade intervall
61.0	3.0	[58.5; 63.0)

Notes:

- Please make sure that the total amount of credits stated above is correct.
- Solely the second correction (green color) is decisive.

Corrections:

The table below lists all corrections (image recognition and complaints during review) that are already considered in the calculation of your grade. If a problem or subproblem is listed multiple times, the correction with the highest number (column "Correction") takes precedence.

Problem	Correction	credits	Annotations
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Compliance to the code of conduct

I hereby assure that I solve and submit this exam myself under my own name by only using the allowed tools listed below.

Felix Schrimper

Signature or full name if no pen input available

Information and Knowledge Management

Exam: IN2105 / Endterm

Date: Friday 19th February, 2021

Examiner: Prof. Dr. Helmut Krcmar

Time: 08:00 – 09:30

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Early submission at _____

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Endterm

Information and Knowledge Management

Prof. Dr. Helmut Krcmar
Chair of Information Systems
Department of Informatics
Technical University of Munich

Friday 19th February, 2021
08:00 – 09:30

Working instructions

- This exam consists of **18 pages** with a total of **9 problems**.
Please make sure now that you received a complete copy of the exam.
- The total amount of achievable credits in this exam is 90 credits.
- Detaching pages from the exam is prohibited.
- Allowed resources:
 - one **non-programmable pocket calculator**
 - one **analog dictionary** English ↔ native language
 - the **lecture slides, your notes, the book (Krcmar, 2015) and other recommended literature**
- **Answers are only accepted if the solution approach is documented.** Give a reason for each answer unless explicitly stated otherwise in the respective subproblem.
- If you print the exam, do not write with red or green colors nor use pencils.
- **No points will be awarded for merely naming or listing terms or definitions. Always provide reasons and complete reasoning.**





Problem 1 Multiple choice (10 credits)

Each question will be awarded one credit. Each question only has one correct answer.

Mark correct answers with a cross



To undo a cross, completely fill out the answer option



To re-mark an option, use a human-readable marking



0.0 a) What is a core strategic process of knowledge management according to Probst et al. (2010)?

- Knowledge Assessment
- Knowledge Usage
- Knowledge Identification
- Knowledge Sharing

1.0 b) What is not a dimension of platform governance in an app store according to Tiwana (2014)??

- Decision rights partitioning: provide autonomy
- Pricing: create incentives
- Marketing: ensure usage
- Control portfolio design: ensure integration

1.0 c) Under which conditions does IT/IS create value?

- If customers ignore IT/IS-augmented services
- If business and IT/IS strategy are aligned
- If business and IT/IS strategy do not fit
- If IT/IS is not part of a business value creating process

0.0 d) According to Christensen et al. (2015), products and services resulting from disruptive innovations ...

- overperform dominant ones along the dimensions historically most valued
- underperform in dimensions not valued as important before
- are more complex or more difficult to use
- are cheaper for customers and provide lower margins for vendors

1.0 e) What is not an IT Controlling objective according to Krcmar (2015)?

- Strategic fit
- Process orientation
- Efficiency or adhere to deadlines
- Effectivity, quality and functionality

1.0 f) According to Krcmar (2015), strategic information systems...

- Avoid a decrease of your competitors' competitiveness
- Avoid a decrease of your competitiveness
- Avoid an increase of your competitiveness
- Avoid an increase of your competitors' competitiveness





1.0 g) Knowledge Management can fail because...

- People do not share knowledge
- People have too much time
- Technology is available
- People collaborate

1.0 h) What is not a category of risks presented in the lecture on risk management?

- unknown risks
- unpredictable risks
- known risks
- predictable risks

0.0 i) What is a boundary resource of digital platforms according to Ghazawneh and Henfridsson (2013)?

- Java
- Co-Creation
- Business Value
- Application programming interfaces (APIs)

j) The resource-based view according to Barney (1991) directly covers

- capabilities
- market position
- suppliers
- customers





Problem 2 IT-enabled Strategies and Business-IT alignment (15,5 credits)

You are working for HouseScout48, Germany's biggest online platform for real estate. From the advertising marketplace in its early days, it has developed into the leading online marketplace for real estate. The platform integrates more and more services and products that offer high added value for all market players: This ranges from the search to the move. It provides support for landlords as well as for selling apartments, houses and commercial properties.

Currently, the company struggles with shrinking profit and slower growth. Since you demonstrated knowledge in both technology and strategy, the management board asks you to develop a digital business strategy that enables future growth.

- 0 7,5 a) Knowledge and understanding: 7,5 credits
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- The CIO (Chief Information Officer) is particularly criticized. He argues that the IT department has always done what the business has asked. Knowing that IT is critical to business value, you sit down with him to discuss the IT strategy. You created a list of ideas, how the IT department can create organizational benefit. Present five IT-potentials and their organizational benefit (0,5 credits each). Give examples how each potential helps the business of HouseScout48 (1 credit each).

Informate Down - The IT department could set up Slack or Teams or an Email network that allows the management to communicate more efficient in the company 1

Automate - The IT department could set up processes that processes are more automated (automative booking without human confirmation) and the company could save personal costs 1

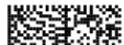
Knowledge creating - The IT department could offer online knowledge talks and create a working wiki that helps employees to stay up with technical innovations and keeps HS48 innovative 1

Precise / target - The IT development could set up software to track the intern and extern processes (house selling processes,...) in a transparent way. This would lead to more in house effectivity and more customer satisfaction 1

Analytical - The IT department could use big data to provide the customers more information about possible house pricing in a special region based on knowledge of previous selling 1

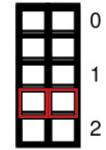
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1.5 b) Knowledge and understanding: 2 credits

He repeats his argument, that all requests by the business were fulfilled. The CEO told you, that the IT department is not innovating. Explain the concept of strategic alignment (1 credit). Explain the two-way relationship between corporate strategy and information systems (1 credit).



Strategic alignment means, that the Information Systems are aligned to the companies strategy.

Relations:

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The IS is aligned to the Corporate Strategy

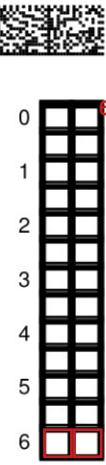
The IS enables the Corporate Strategy

0,5

incomplete definition

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6.0 c) Knowledge and understanding: 6 credits

Also explain the six alignment relationships in the IT-Alignment Model by Reynolds and Yetton (2015).

Hint: Remember that simply naming the relationship is not enough, but explain how the relationships work both ways.

Functional Alignment between Corporate Strategy and Corporate IT Platform Strategy 1

- As mentioned in the previous problem, the Corporate IT Platform needs to align with the Corporate Strategy to enable the Strategy

Functional Alignment between Business Unit Strategy and Business Unit IT Portfolio Strategy 1

- Also the Business Unit IT Portfolio Strategy needs to align with the Business Unit Strategy to enable the BU Strategy in a good way

Structural Alignment between Corporate IT Strategy and BU IT Strategy 1

- the Corporate IT Strategy should include all shared services that the Organization needs, while the BU IT Strategy should only include the services needed for the BU Strategy, if a service is needed from many BU Strategies it should „move up“ to the Corporate IT Strategy

Structural Alignment between Corporate Strategy and BU Strategy 1

- the Corporate Strategy should explain the Organization strategy and through that sets boundaries for the SBU Strategy, the SBU Strategy should contribute to the Corporate strategy and defines capabilities to compete in an individual market. The Corporate Strategy focus on the whole organization

Misalignment between SBU Strategy and Corporate IT Strategy 1

- As mentioned above, the SBU Strategy should only define the SBU IT Strategy but not the Corporate IT Strategy. This should also be the case if IT services are needed from more than one SBU Strategy but is then an indirect relationship. A relationship between SBU Strategy and Corporate IT Strategy is an indicator for misalignment.

Misalignment between Corporate Strategy and SBU IT Strategy 1

- The corporate strategy should define the Corporate IT strategy not the SBU IT Strategy, because this should work on a more concrete level to enable the SBU Strategy.





Problem 3 Information and Knowledge Management (11 credits)

1.0 a) Application and analysis: 2 credits

You propose to establish an effective knowledge management. Explain how (1 credit) and why (1 credit) knowledge and strategy must align.

The knowledge management should enable the strategy to support processes and organizational effectiveness. The knowledge gap and the strategy gap should be closed the same way.



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1.5 b) Discuss and evaluate: 3 credits

Link the knowledge-strategy alignment to the previously explained business-IT alignment. Provide three valid arguments why both go hand in hand.

A good Knowledge management enables a good working IT that enables a perfect integration of the strategy.



IT can create good structures for knowledge management to make this more effectively.



Only if all three components work in one direction (guided by the strategy) the organization can work as good as possible.



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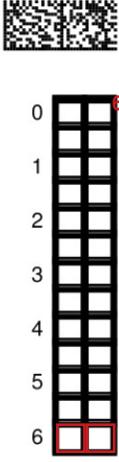
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**6.0 c) Application and analysis: 6 credits**

Propose three tools or means for effective knowledge management (0,5 credits each). Explain which knowledge management process they serve (0,5 credits each) and how they may contribute to a better **business-IT alignment**. (1 credits each)

Knowledge Bearar Maps for knowledge Identification

- If the strategy needs a new service (for example a new backend) they can check in the KB Map who is the beckend specialist and directly ask him if he could help starting the process and designing it. This lead to a more effective way then just asking around in the company who could do the job.

Hiring of new employees for knowledge Acquisition

- it is a common strategy to hire experts on a field to push projects faster and better. Example: Apple hires more and more car specialists (from Porsche, Tesla, ...), do they want to build the iCar? Those experts also contribute to a good IT business alignment by their experience.

Room for Experiments to develop knowledge in your company

- Build innovation laps in your company and give employees the time to use them. When people come together and try innovative products they will also learn for the daily business, build better team works also accross apartmetns which leads to less communication problems (-> better IT business alignment)





Problem 4 IT-Controlling (7.5 credits)

Next, you talk to the controlling department. They show you the current list of projects and how each performs.

3.0 a) Knowledge and understanding: 3 credits

You notice that the focus is on operative controlling only. Explain the management, what area is missing (1 credit). Explain, why this missing part is important for the IT-Strategy (1 credit). Also briefly explain how it is related to business-IT alignment (1 credit).

The missing area the IT controlling methods for strategic. This missing part is important to build a continuous controlling live-cycle with different selection criterias (or with a IT balanced scorecard) to manage the portfolio and recognise problems early and fix them. in the IT Portfolio controlling lifecycle a continuous IT portfolio analysis happens, that also checks if the IT portfolio is still in alignment with the IT strategy and by that transitively it checks if its still in alignment with the business strategy

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3.0 b) Knowledge and understanding: 4,5 credits

You propose a reorganization of the IT-Controlling functions, based on the IT process model. Explain the 3 IT-Controlling functions according to Gadatsch (2009): What are they (0,5 credits each), what tasks do they include (0,5 credits each) and are they strategic or operational (0,5 credits each)?

project portfolio controlling is a strategic IT controlling method. It defines the portfolio (the IT strategy and a strategic plan for the project portfolio)

Project controlling - is a mixed process between strategic IT controlling and operational IT controlling. It includes the development as well as concrete design of the project. It ensures that standards defined in the portfolio controlling stage are implemented.

Product infrastructure controlling is a operational IT controlling method. It describes for example the support for users and the daily business to run the project smoothly.

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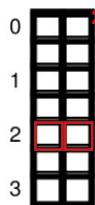


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Problem 5 IT Governance (9 credits)



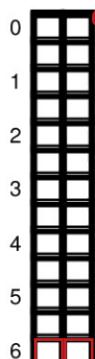
2.0 a) Application and analysis: 3 credits

When discussing the future IT project portfolio, a discussion between the CIO, CEO, and CFO starts about who has the decision right. Obviously, there is no IT governance in place. Explain what IT governance is (1 credit), why it is needed (1 credit) and how it helps to achieve business value from IT (1 credit).

IT governance is a framework for decision rights and accountabilities to ensure desirable behavior in the use of IT. It is needed to make decision right clear and avoid discussions like mentioned in this problem. There should be no uncertainty about who can decide what and who is responsible for problems or success.

It helps achieving business value from IT by giving clear structures about who decides what the IT has to do to support and enable the organizations or BU strategy.

Why is it needed -> Separation of ownership and control



6.0 b) Discuss and evaluate: 6 credits

After you explained, that IT governance included the management of IT related risks, the CEO proudly argues that risk management is not needed, since no project ever failed. Inspired by your LinkedIn feed you reply: "If projects are not failing, we are not innovating enough".

Present three arguments how innovation and risk management go hand in hand or support each other. You can use different types of risks and different types of innovations in your arguments. (2 credits each).

Risk management should always be included because the Titanic sank too ;)

If a company uses a new innovation for example an architectural innovation (parallelize processes) it should always be considered what risks could occur and how the magnitude of the risk could be. Parallelize processes could lead to a quality loss which can be critical in high security areas.

✓ ✓

A radical innovation always leads to big risk possibilities because something is created totally in a different way than before. The first iPhone was radical, if it would have been no success Apple would have spent a lot of development money without ROI.

✓ ✓

Incremental is an approach without a lot risk on the first hand. If the iPhone gets a better battery nobody will complain. But the risk with only incremental innovation is that a company loses its innovation. Nokia took small risk by „only“ improving their phones but took the risk that innovation could replace them, which had a big magnitude in the end.

✓ ✓





Problem 6 Disruptive Innovation (10 credits)

Your argumentation was highly convincing. The CEO put you in charge of the new innovation project "Disrupting Real Estate". The CEO's vision is a digital business model leveraging artificial intelligence, blockchain, and virtual reality to disrupt the way real estate is sold. The goal is that based on few data points, HouseScout48 can calculate the value of a real estate objecte, post it on the digital platform and sell it using smart contracts.

9.0

Discuss and evaluate: 10 credits

Discuss if this business model is a disruptive innovation and decide whether it is a disruptive innovation or not. Use all of Christensen's (1997) criteria (1 credit per criterion with explanation if it is fulfilled or not; 1 credit for a final decision). If you make assumptions, e. g. about the market, state them in your argumentation.

Perf. contract?

Histrically no one valued attributes - the innovation would not underperform because customers already value an easy and workless selling
 Other qualities - there would be no other qualitys then already existing in my opinion *OK*
 cost and margin - the innovation would be cheaper for customers and provide lower margin for other persons that are currently included in selling processes

simplicity - the selling would be easy so this criteria is met totally

interest of main customer - the customers of the current market would also be interested in the new technology - criteria not met

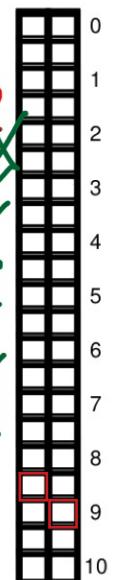
first customers - the first customers are not a niche - criteria not met

first vendors *X* would there come up a high rate of startups - maybe, but I am not sure so I would see the criteriy met 50/50?

value chain - the value chain would still be the same - criteriy not met

market disruption - the market could be disrupted

In overall I think this wouldnt be a disruptive innovation because not all criterias are met - there are very few criterias met





Problem 7 DELD - Strategic Information Systems (10 credits)

Congratulations - After the rescue of HouseScout48, DELD a large discount grocery store made you an offer you couldn't refuse. DELD is currently undergoing a major transformation project. The aim is to reduce food waste by introducing a digital platform. The platform connects all DELD stores and warehouses, which operate as separate legal entities, knows item quantities in the warehouses and their individual expiration dates. Customers of the platform (private consumers, restaurants, bars, etc.) can buy food that is close to its expiration date or has just expired at reduced prices and have it delivered to their homes/restaurants/bars. This transformation consists of multiple projects and you are the portfolio manager, reporting directly to the supervisory board.

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0.0 a) Discuss and evaluate: 6 credits

Media reaction and feedback from your customers show a high level of support and enthusiasm for your project. You start your first day by analyzing the fundamental strategy. You wonder if the digital platform can be considered a strategic information system (SIS).

If you argue that it is a SIS, discuss in which system category for SIS according to Krcmar (2015) the platform fits and why it does not fit the other three (1 credit per discussed category). Find examples for all categories (0,5 credit each).

If you argue that it is not a SIS, discuss why it does not fit into either category and find examples of all four categories.

I would argue that the system would be a Breakthrough and could be a weapon in the future.

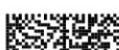
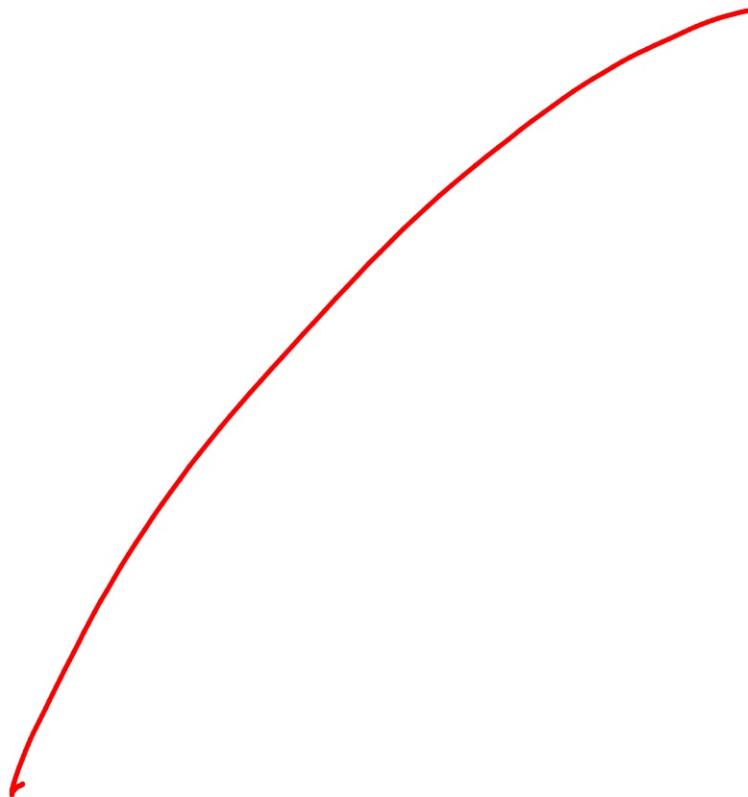
→ b)

Factory - an IOT system in a production hall of a car manufacturer like BMW, impact on core operations - no strategic system

Support - TUMRoom finder, supports the tum but has no impact on strategy or core operations

Breakthrough - see this example

Weapons - FB or Uber or Google - is a strategic system with high impact on core strategy and core operations





3.5 b) Application and analysis: 4 credits

Use McFarlan's strategic grid to determine the impact of the digital platform on the business strategy. Explain all four types and discuss for each whether or not the digital platform fits that type.

✓ Factory - an IOT system in a production hall of a car manufacturer like BMW, impact on core operations - no strategic system
Support - TUMRoom finder, supports the tum but has no impact on strategy or core operations
Breakthrough - see this example
Weapons - FB or Uber or Google - is a strategic system with high impact on core strategy and core operations

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Problem 8 DELD - Business Models (8 credits)

Currently, prior to the launch of the digital platform, DELD's core business model is to operate grocery stores where customers can find a variety of food and seasonal items. In addition, the DELD online shop offers a larger variety of seasonal items. Both business models rely on the backend system "WAWI" that manages stock and logistics.

- 0.0 a) Knowledge and understanding: 3 credits
Classify all three business models of DELD according to the four types of IT-associated business models by Steininger (2019) and explain your classification (1 credit each).

Facilitator - the infrastructure would be supported by the tracking of the products and food items

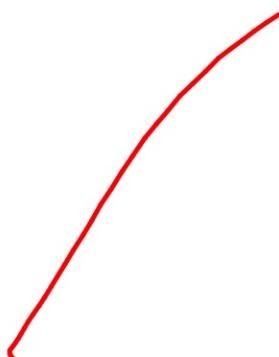
Mediator - selling of traditional good over the digital platform

Ubiquity -

Outcome - there would be value creation through IOT systems in the halls for the food

DELD's BMs?

- 0.0 b) Discuss and evaluate: 5 credits
Based on your previous classifications, would you consider the introduction of DELD's digital platform to reduce food waste a business model innovation according to the definition of Gassmann et al. (2014)? Explain your decision using all four elements of the magic triangle (1 credit per element; 1 credit for the decision with reason).





Problem 9 DELD - Digital Platforms (9 credits)

You learned that DELD stores are franchises, meaning each store is acting as separate legal entities, and mostly independent from the DELD headquarter. Each store can decide on their own, if it wants to participate in the digital platform to reduce food waste.

3.0 a) Knowledge and understanding: 3 credits

What kind of network effects are in place in this scenario (1 credit)? Explain why and how these network effects are beneficial for the platform (2 credits).

There is an indirect cross side network effect because the increasing adoption by the shops has to start. Increasing adoption by the customers would follow and so on
 They bind the customer to a platform and this platform has a snowball effect which could lead to a winner takes it all result

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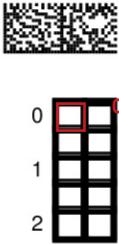
0.0 b) Knowledge and understanding: 4 credits

The independence of the stores also creates platform-related competition. Additionally the amount of groceries offered on the platform is limited. Name and explain what kinds of platform competition occur in the retail ecosystem.

Hint: LODI, DELD's biggest competitor launched a similar platform recently.

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0.0 c) *Discuss and evaluate: 2 credits*

For DELD's digital platform, give an example of what might be a boundary resource for store owners (1 credit). Explain how it would work as a boundary resource (1 credit).



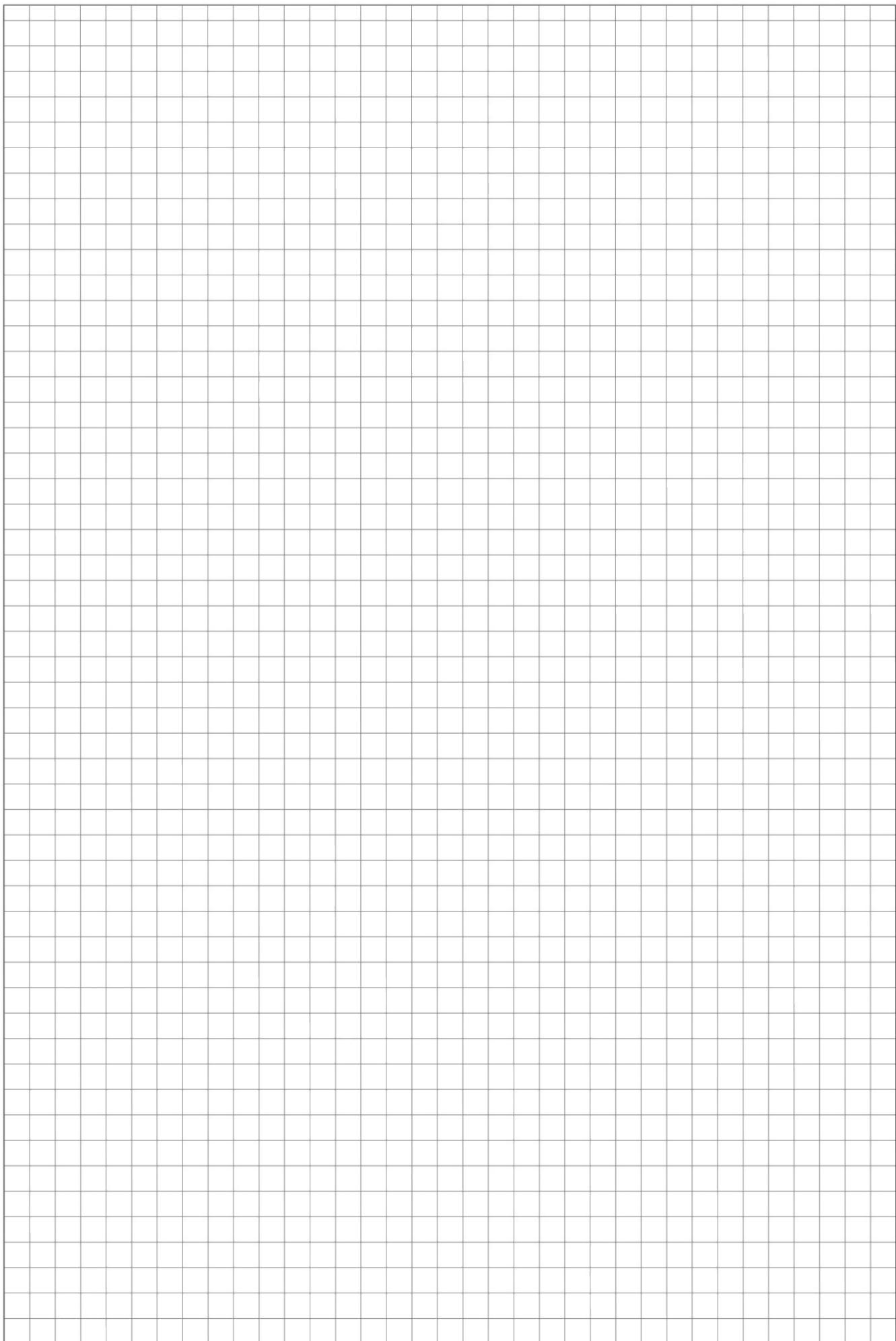


Additional space for solutions—clearly mark the (sub)problem your answers are related to and strike out invalid solutions.





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