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## Information and Knowledge Management

**Module:** IN2105

**Date:** Friday 19<sup>th</sup> February, 2021

**Examiner:** Prof. Dr. Helmut Krcmar

**Exam:** Endterm

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**Last update:**

Wednesday 10<sup>th</sup> March, 2021

<b>Σ (Endterm)</b>	<b>Grade (Endterm)</b>	<b>Grade intervall</b>
46.5	4.0	[45.0; 49.5)

**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.

<b>Problem</b>	<b>Correction</b>	<b>credits</b>	<b>Annotations</b>
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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.

Julian Macias De La Rosa

Signature or full name if no pen input available

# Information and Knowledge Management

**Exam:** IN2105 / Endterm

**Date:** Friday 19<sup>th</sup> February, 2021

**Examiner:** Prof. Dr. Helmut Krcmar

**Time:** 08:00 – 09:30

	P 1	P 2	P 3	P 4	P 5	P 6	P 7	P 8	P 9
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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 19<sup>th</sup> 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 Identification
- Knowledge Sharing
- Knowledge Assessment
- Knowledge Usage

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

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

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

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

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

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

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

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

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

- Avoid an increase of your competitiveness
- Avoid a decrease of your competitors' competitiveness
- Avoid a decrease 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
- predictable risks
- known risks
- unpredictable risks

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

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

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

- capabilities
- customers
- suppliers
- market position





## 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.

**7.5 a) Knowledge and understanding: 7,5 credits**

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).

With the geographical benefit you can overcome space by for example providing an infrastructure to enable home office and global meetings.  
 So the company can grow faster in other areas in the world because the communication has no more geographical boundaries.  
 With the informate-Up benefit, information about some problems reach the management faster and decisions can be made faster.  
 With information-Down, the management can better inform the workers about the new Strategie's approach -> decisions are conducted faster.  
 With the analytical benefit the firm could analyze the all transaction and could analyze why the transactions succeeded and why some did not.  
 With the Transform benefit the firm could transform its business model maybe that it would be possible additionally to offer Appartements to rent for a period of time.

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## 1.0 b) Knowledge and understanding: 2 credits

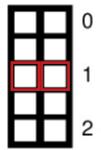
He repeats his argument, that all requests by the business were fulfilled. The CEO told you, that the IT department is not innovating. Explain the concept of strategic alignment (1 credit). Explain the two-way relationship between corporate strategy and information systems (1 credit).

The corporate strategy aligns IS and IS enables the corporate Strategy. So the IS must support the corporate strategy with its objectives.  
Which enables new strategies.  
(Over and over again)

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definition missing

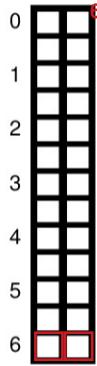




## 6.0 c) Knowledge and understanding: 6 credits

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.



- The corporate IT platform strategy should be aligned with the corporate strategy.  
So the corporate IT platform should (only) provide everything what the company needs 1
- A strategic business unit has its own strategies which support the business strategy and everything what the strategic business unit needs 9
- The SBU portfolio provides SBU specific strategies, that means, if something is relevant for more than one sbu then it goes up to the corporate IT platform strategy.  
So it can be shared across the company as corporate service 1
- A SBU should be aligned with the corporate strategy but it should still have its own strategy to succeed. So it is a bit flexible due to the corporate strategy boundaries. 1
- A SBU does not determine the corporate IT platform strategy. The corporate IT platform strategy is a contact point for all SBUs and should not contain focus on individual SBUs. Otherwise it could lead to a misalignment 1
- The corporate strategy does not focus on specific SBU IT portfolios. The SBU Portfolio should focus on its own SBU and not share its content to other SBUs.  
Otherwise it is an indicator for missalignment 1





### 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.

A company needs to keep its core competencies aligned to its strategy for an optimal output (for achieving goals)

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**1.0 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.

The knowledge enables what a company can do (with it), which enables new strategies where the future knowledge must be aligned.

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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 sharing is important for getting knowledge to the right places (possible with WIKIs)

Knowledge identifiaction is important for providing an overview over important data, information and cpabilities (for example with knowledge bearer maps)

Knowledge Acquisition is important for getting best possible access to external knowledge (for example hiring)





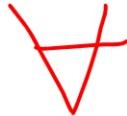
## Problem 4 IT-Controlling (7.5 credits)

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

**2.0 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 strategic controlling is missing. It is important for the project portfolio controlling by developing an business-IT aligned strategies. It also helps in the Project controlling . It assures that the project is executed correctly.



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**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 strategic. ✓ about selecting the right project (that fits to the business strategy) and developing of the IT strategy (for example definition of hardware, software and security standards) So its about IT strategy development
- Project Controlling is both strategic and operational because in the one hand the development is ongoing (for example implementation of standard software),  
on the other hand due to the strategy the project should be executed correctly. ✓
- Product and infrastructure controlling is operational. ✓ about IT operations (for example IT infrastructure like networks, servers, user support, etc.)



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## Problem 5 IT Governance (9 credits)

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### 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 is needed for decision rights and accountabilities. So its about who has a decision right, who has an input right, how are the people held accountable for their role.

IT governance should be aligned to the corporate governance to create business value by supporting to achieve the corporate performance goals

Why is it needed -> Separation of ownership and control

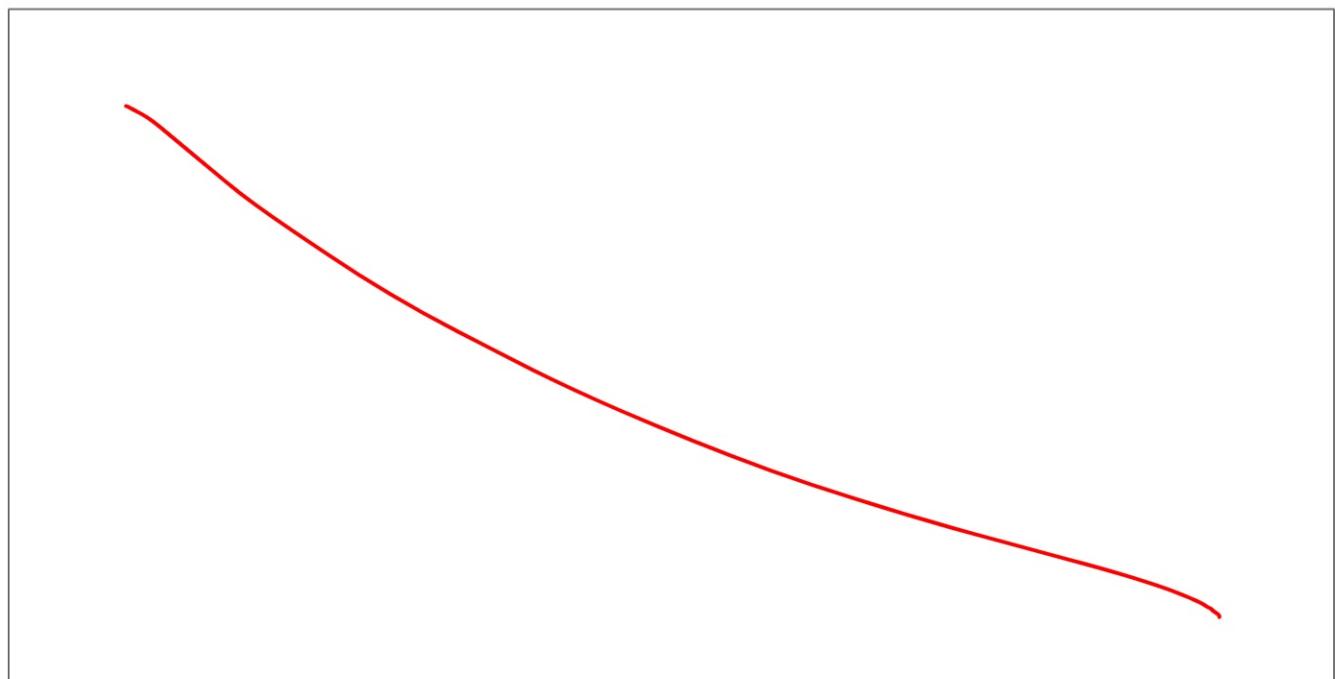
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### b) Discuss and evaluate: 6 credits

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).



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## 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 object, post it on the digital platform and sell it using smart contracts.

4.0

*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.

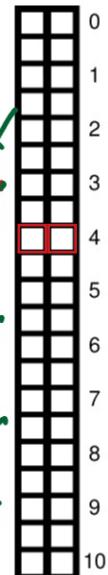
The innovation leads to a different value chain (for example the blockchain needs a lot of IT expertise) it is fulfilled X Not for plan ✓

The innovation underperforms dominant ones along the historically most valued by customers in the market and it is not valued as important before because the customer does not see benefits (in the beginning) or does not know he needs it. But maybe the real estate objects are always calculated perfectly which leads to precise offers. So both are fulfilled. ? Which services are underperformed? X

Cost are higher for the vendor and therefore the margin lower. Because The IT (for example for AI and Blockchain) is really expensive. So the cost and margin criteria is not fulfilled. X

For users it is easier to offer a real estate because he does not need to evaluate it (The AI does it) So the use gets simpler. This criteria is fulfilled. ✓

So not all criteria are full filled so its not a disruptive innovation due to Christensen X





## 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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### 4.0 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.

It is not an inter organizational system, because multiple warehouses (separate entities) are connected ✓

it is not a value added service because the customer does not get additional values. He still gets food. The only value he gets is that he can purchase food for reduced prices (when close to expiration) ✓

It is not in the IT for new products and services category, because the customer still gets the same product. ✓

It can be argued for an electronic market because the transactions are on a digital platform between separate entities (warehouses) and customers. ✓





## 4.0 b) Application and analysis: 4 credits

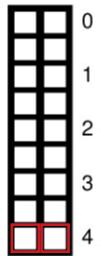
Use McFarlan's strategic grid to determine the impact of the digital platform on the business strategy. Explain all four types and discuss for each whether or not the digital platform fits that type.

The factory type fits because it has a high impact on core operations (System knows Quantities and expiration date)

Support: it supports the local performance because the quantities are always accessible

It is not a weapon because the organization is not transformed and can not transform the industry

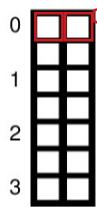
It can be a breakthrough because it has the environmental effect that less food is thrown away





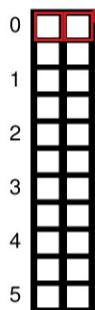
## Problem 8 DELD - Business Models (8 credits)

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.



### 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).



### 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.

**0.0 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).

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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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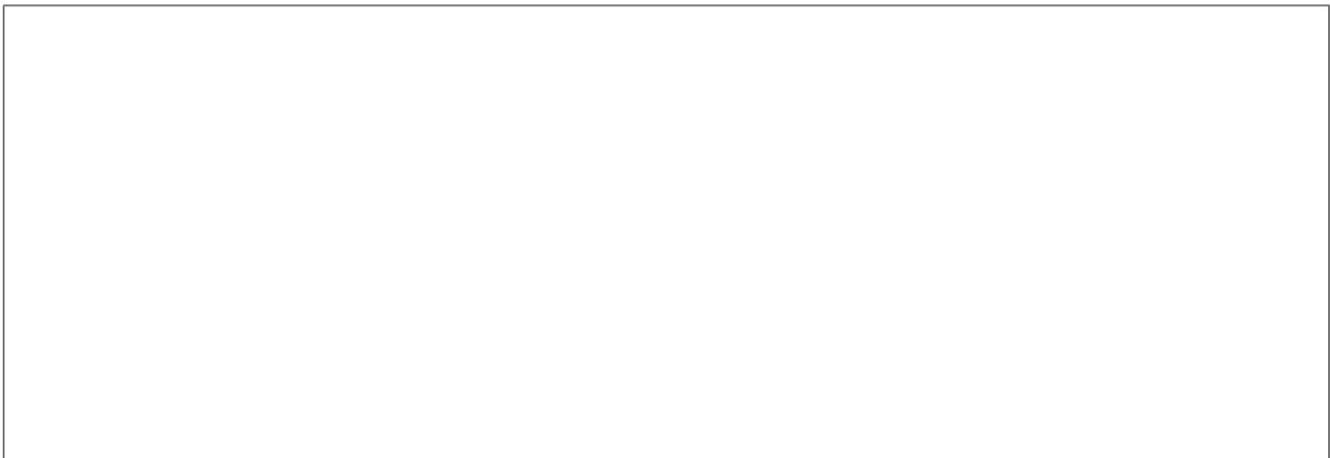


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c) *Discuss and evaluate: 2 credits*

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).

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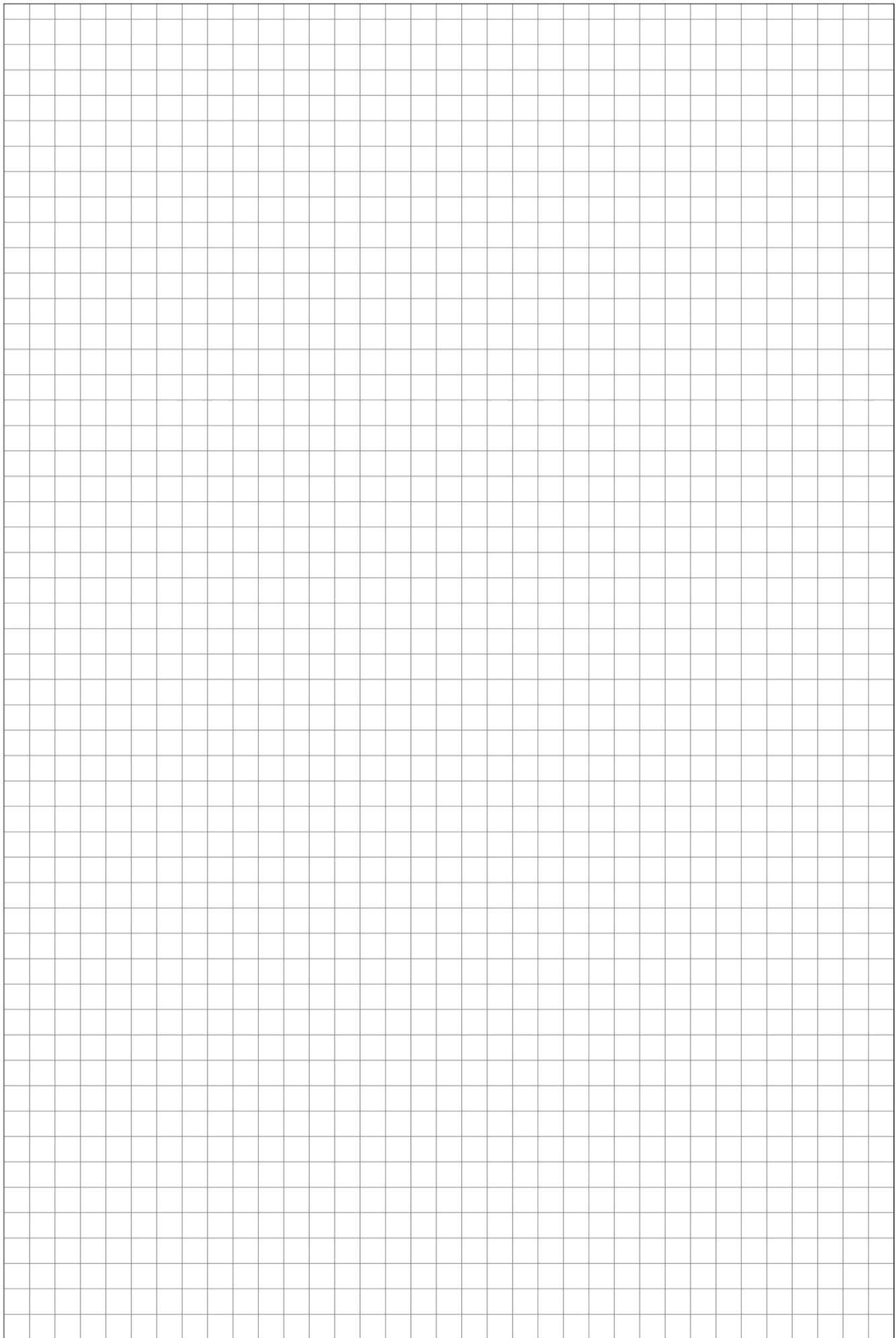


**Additional space for solutions—clearly mark the (sub)problem your answers are related to and strike out invalid solutions.**





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