

DEFENDER

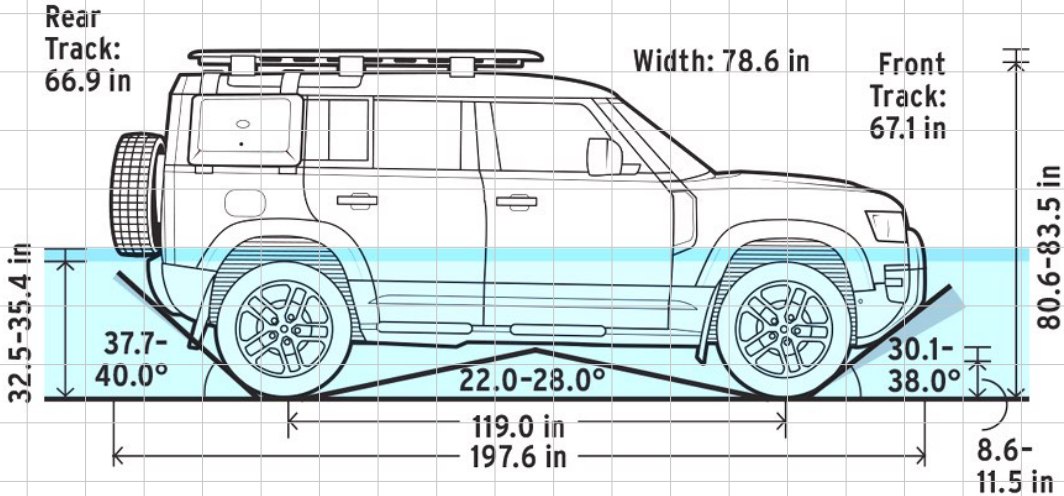


Owner	
Year	
Model	
VIN	
License	



DIMENSIONS

2020 Land rover Defender 110 SE



Fuel: Premium
24 Gal / 90L

Oil: SAE0W20
STJLR.03.5007

Tire Pressures:
Front: 34 - 47
Rear: 37 - 50
(PSI) Light/Normal Load

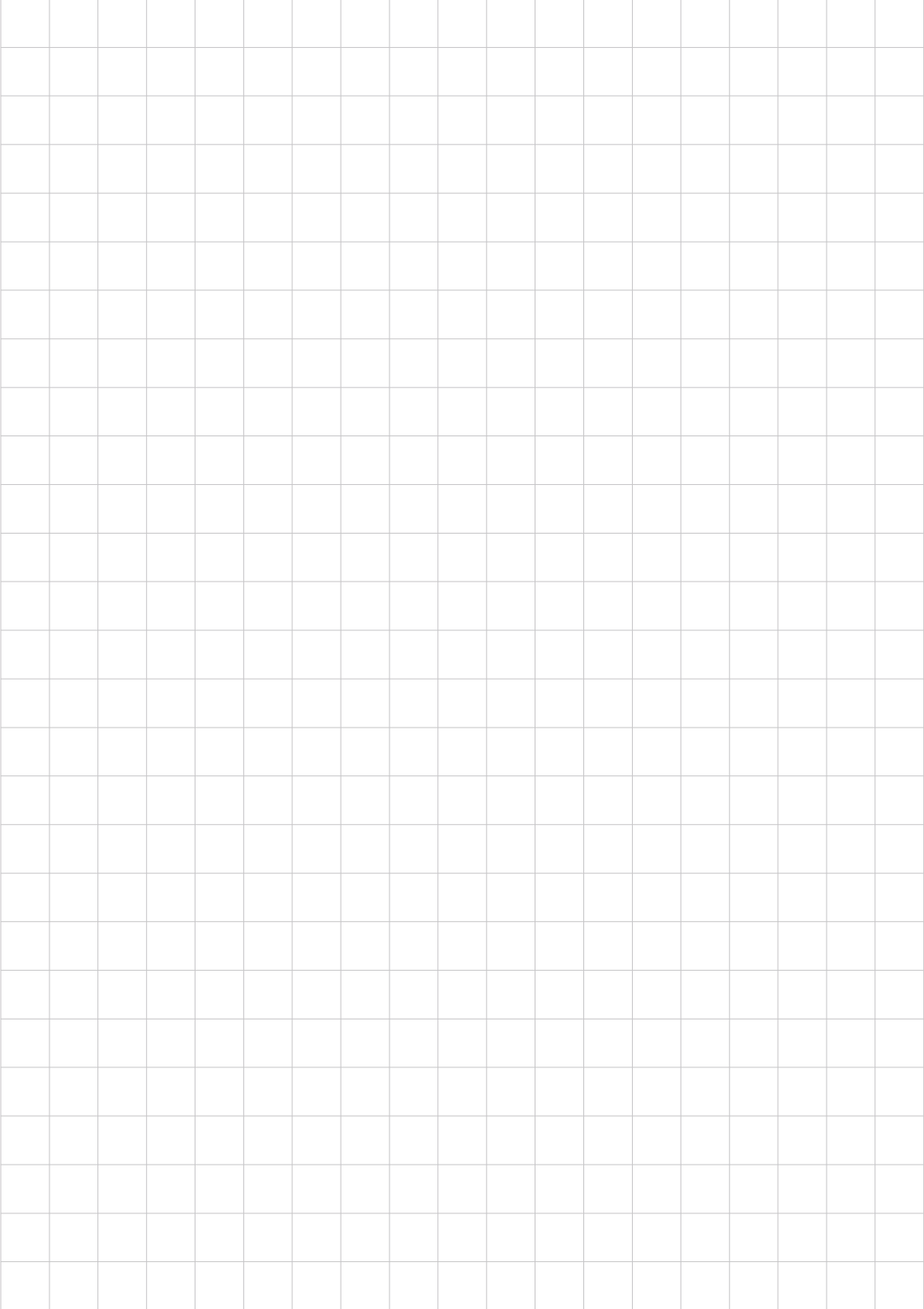
RUNNING OUT OF FUEL

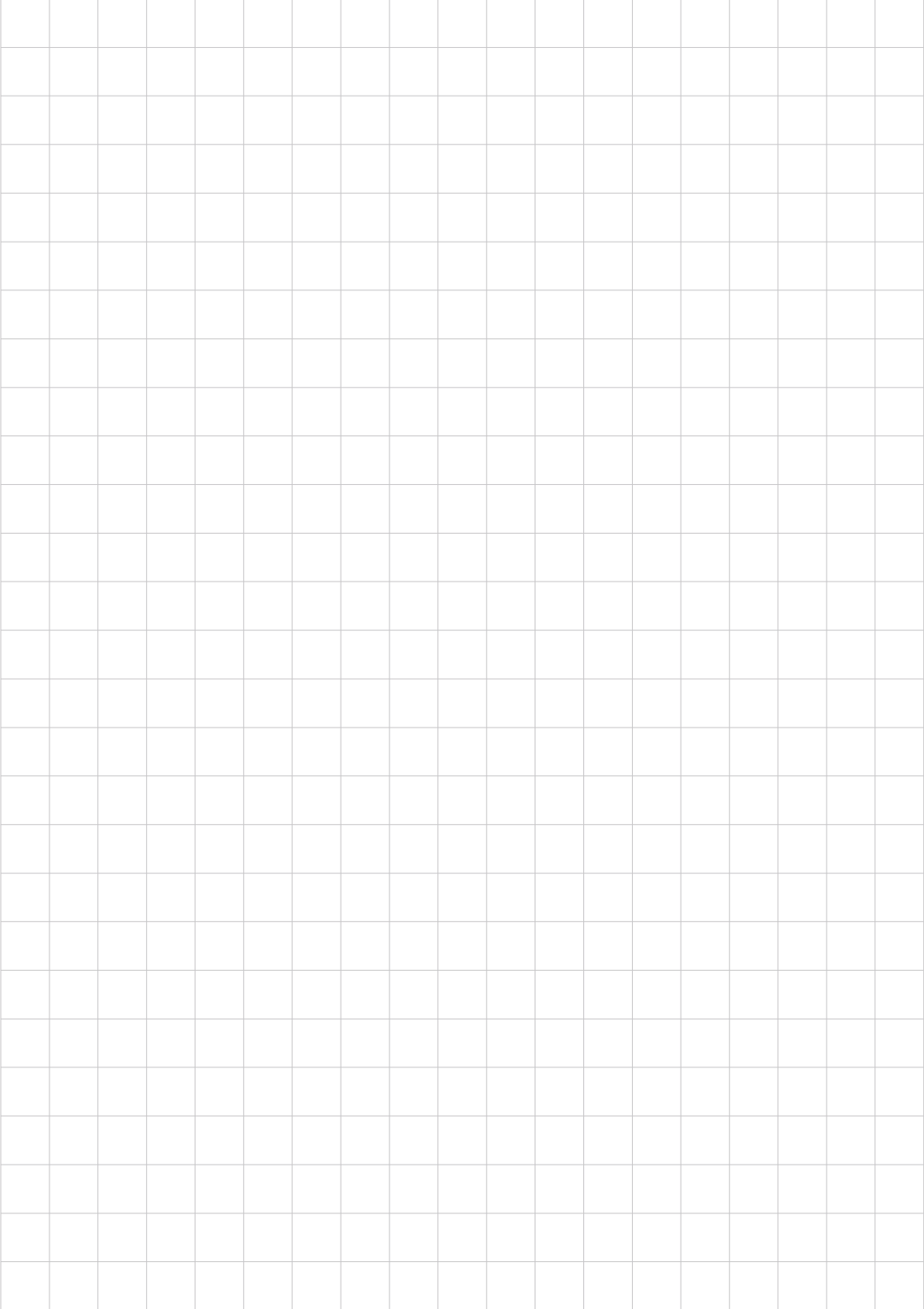
NOTICE

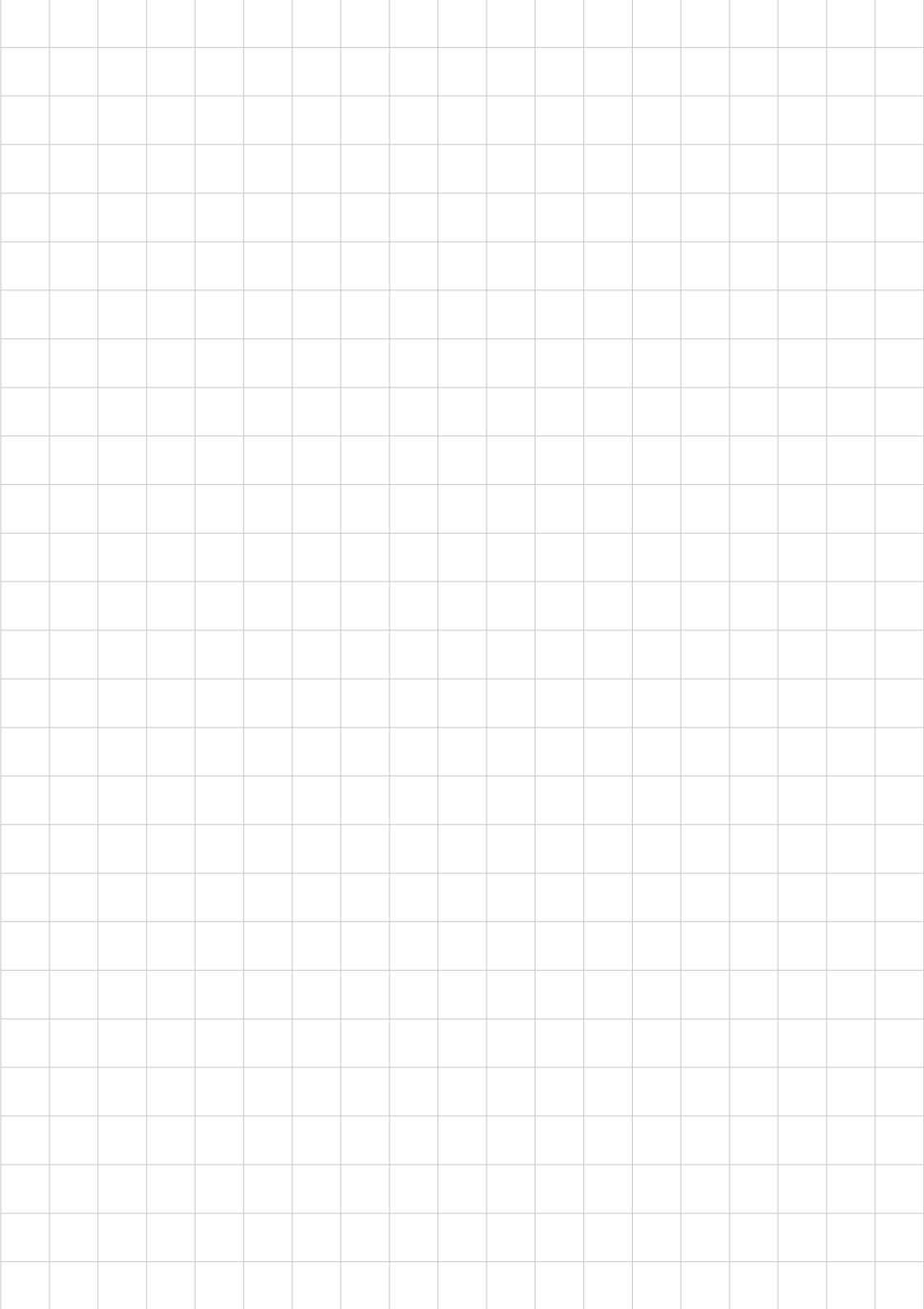
Avoid running out of fuel. Doing so can cause damage to the vehicle's engine, fuel and emission control systems.

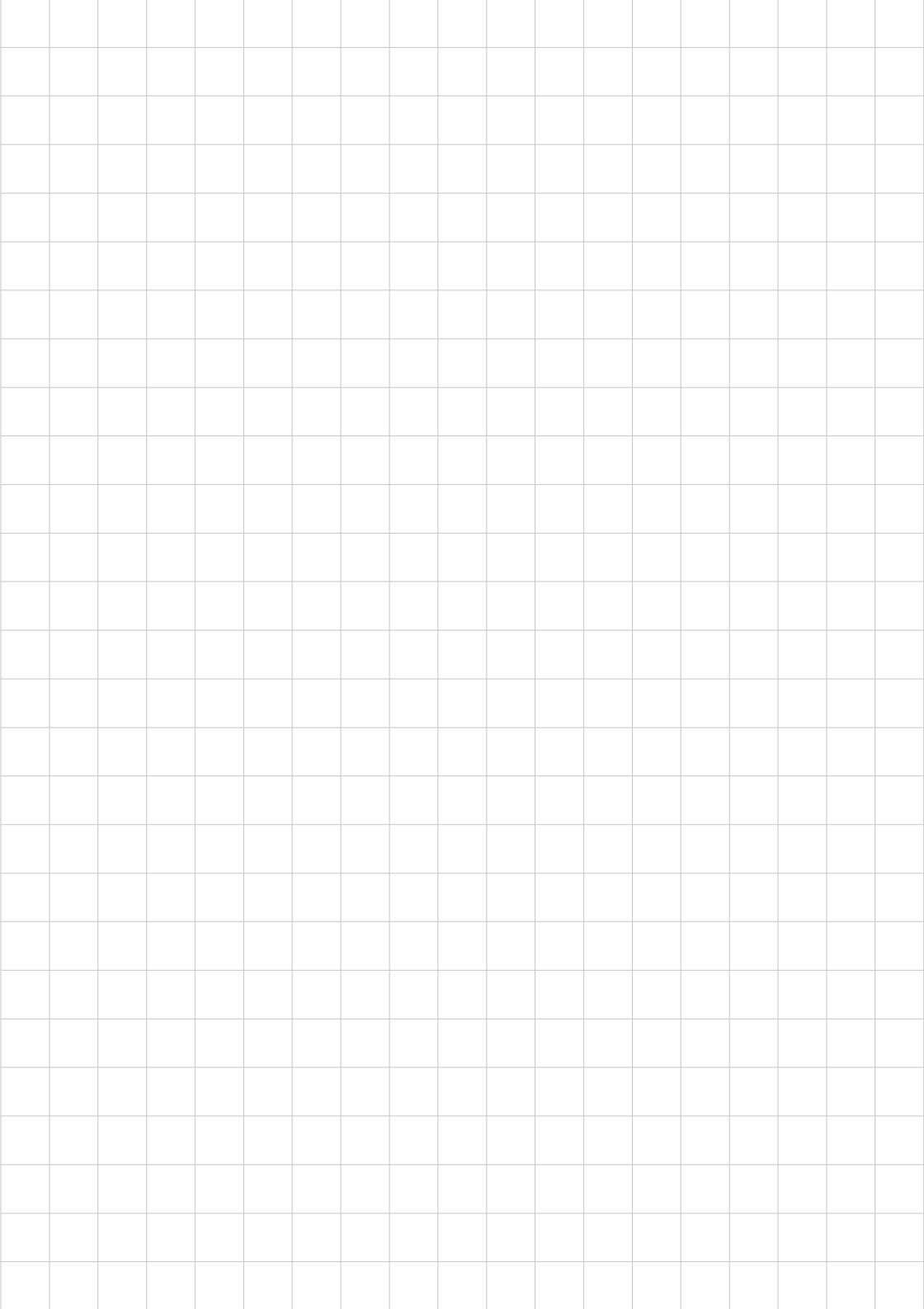
If the vehicle does run out of fuel, a minimum of 1.1 U.S. gallons (4 L) is required to restart the engine. The vehicle should be left with the ignition on for 5 minutes after refueling, before attempting to restart the engine. The vehicle needs to be driven 1 - 3 miles (1.6 - 5 km), in order to reset the engine management and monitoring systems.

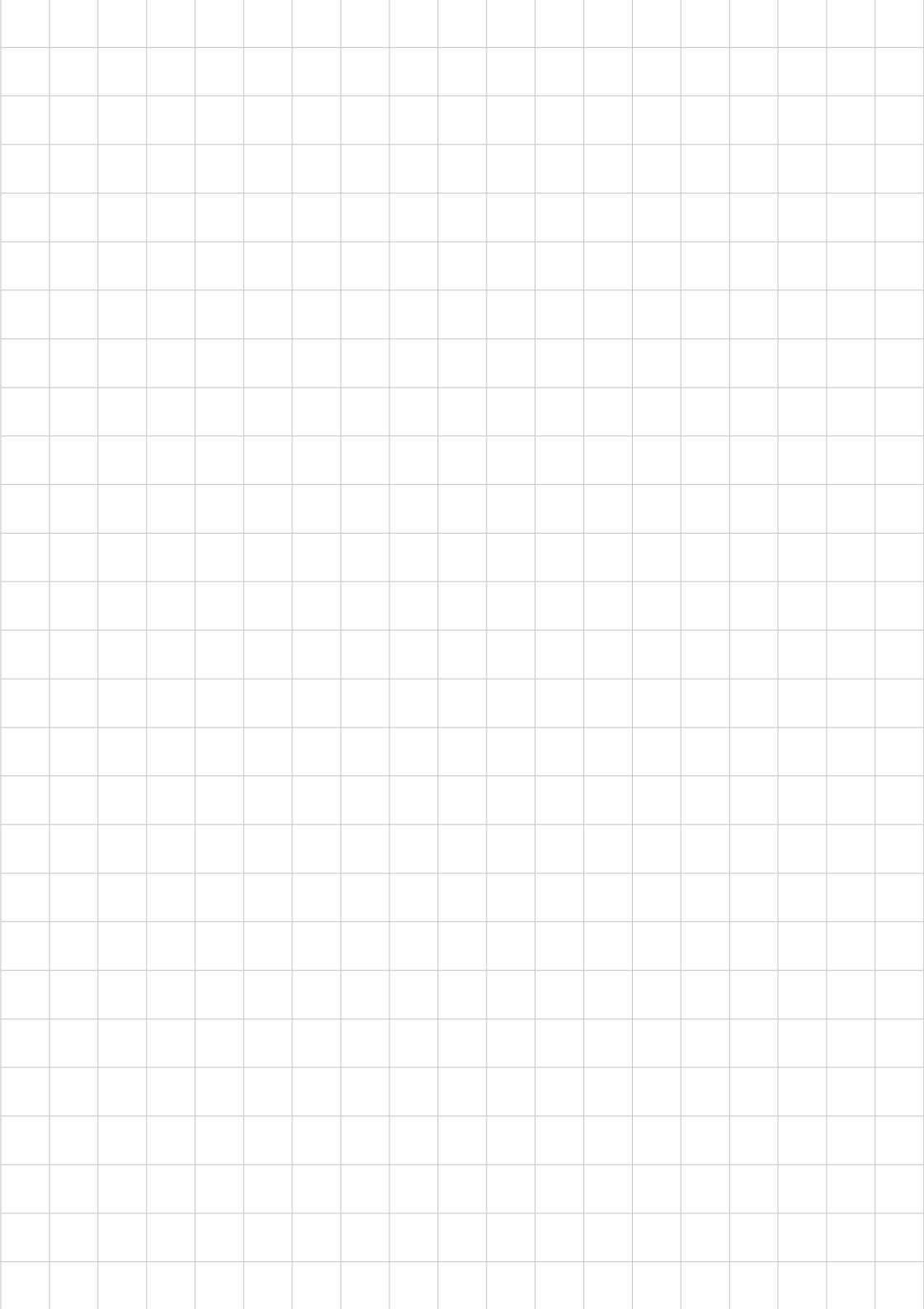
Note: *If the vehicle does run out of fuel, seeking qualified assistance is advisable.*

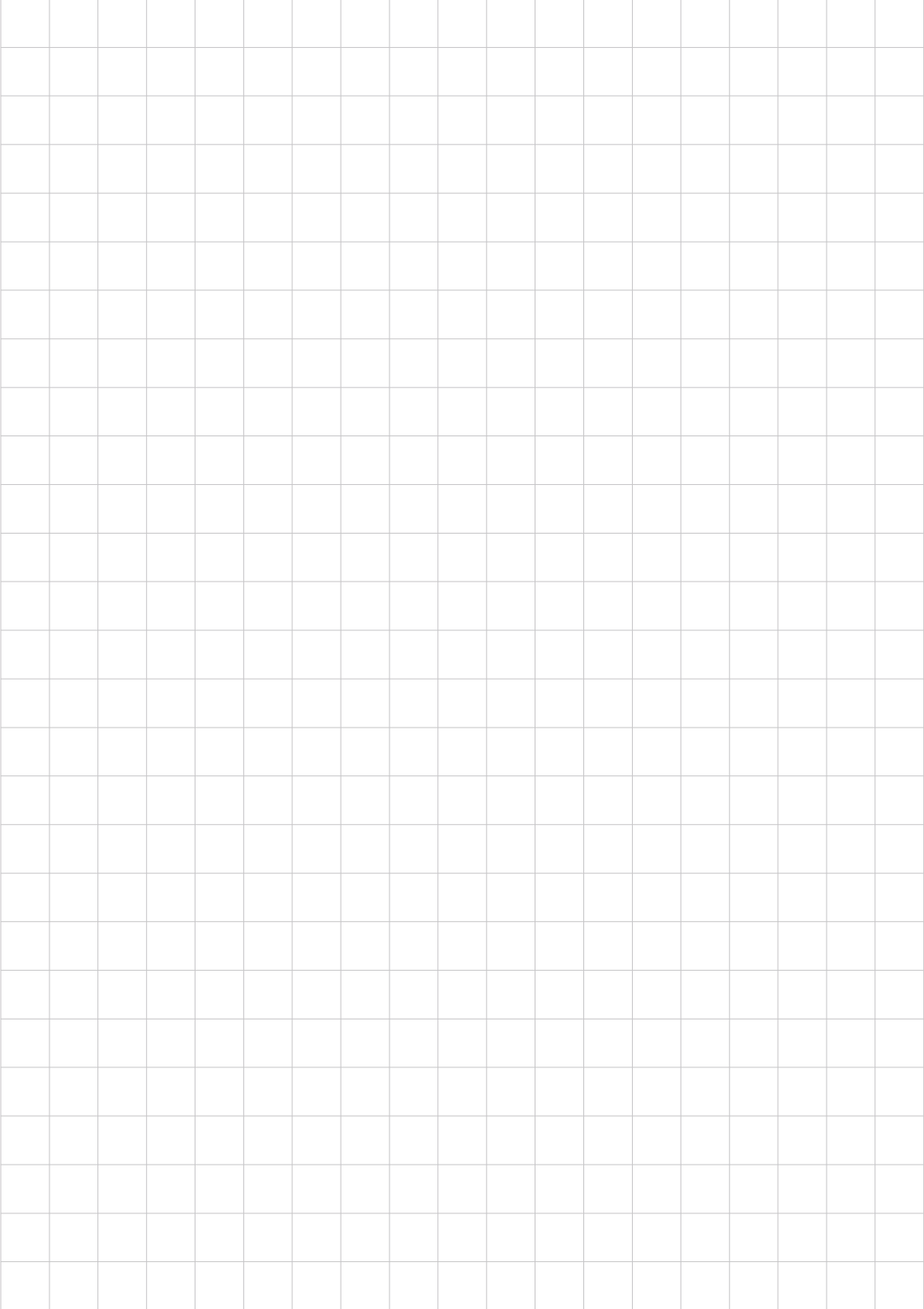


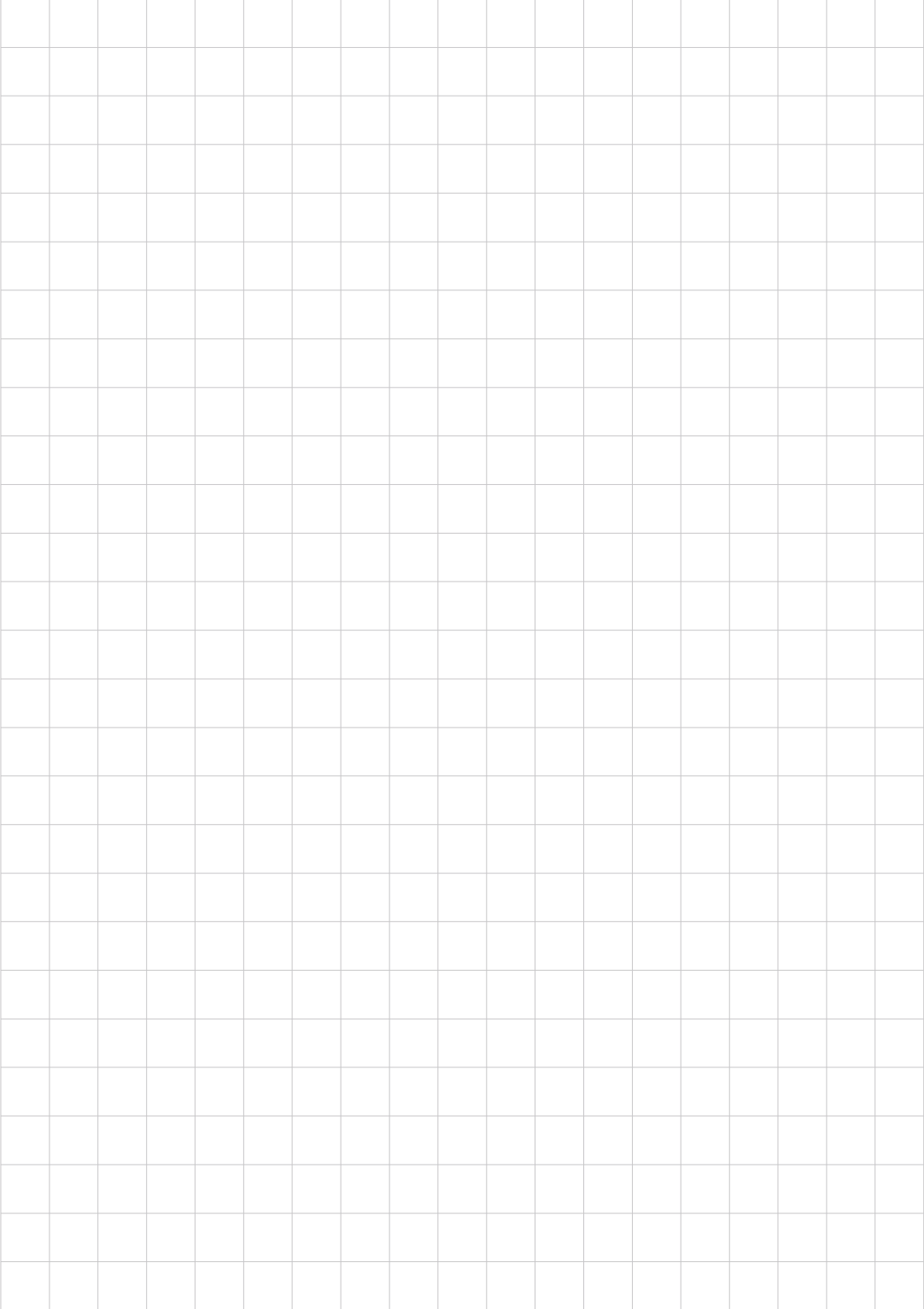


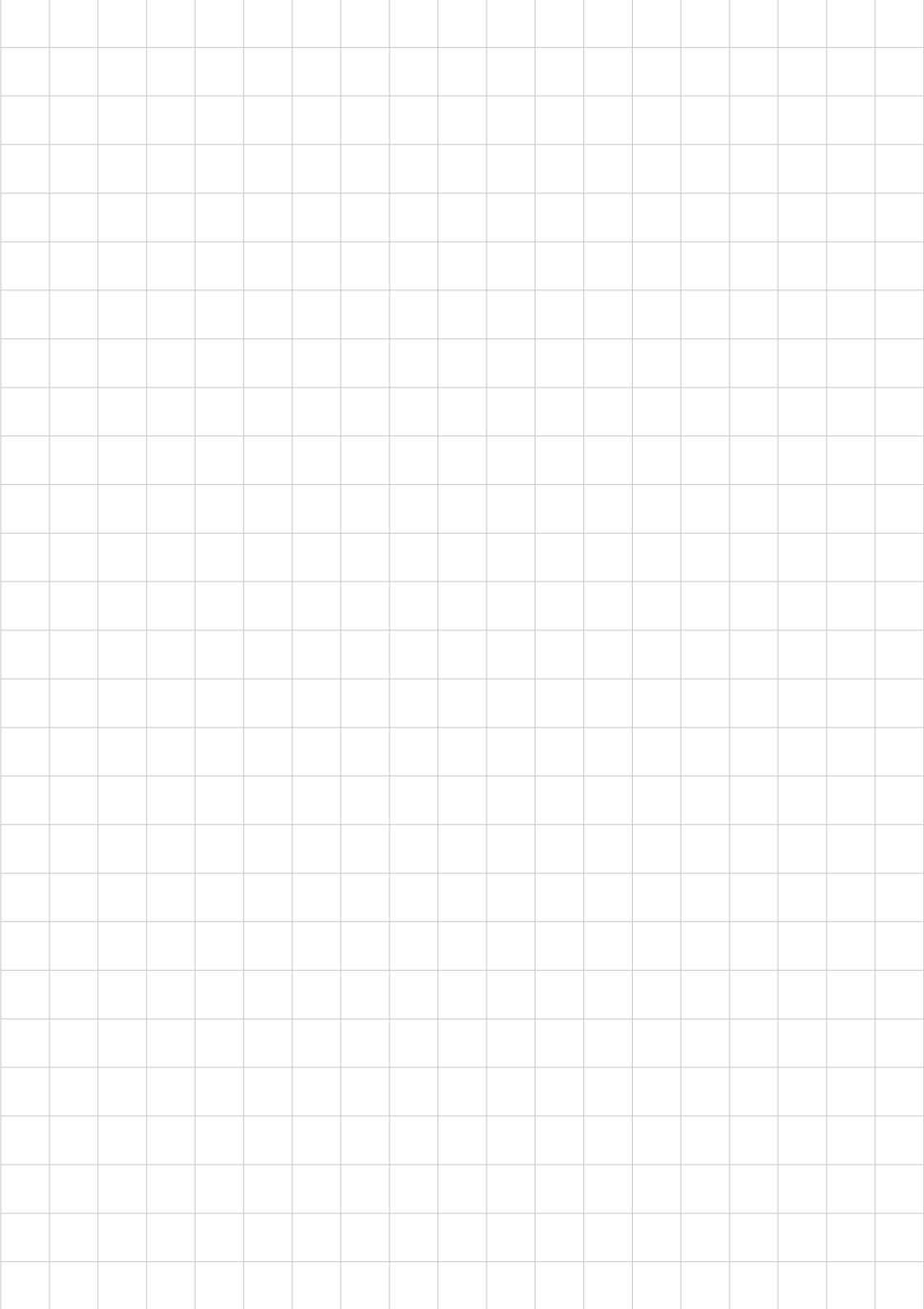


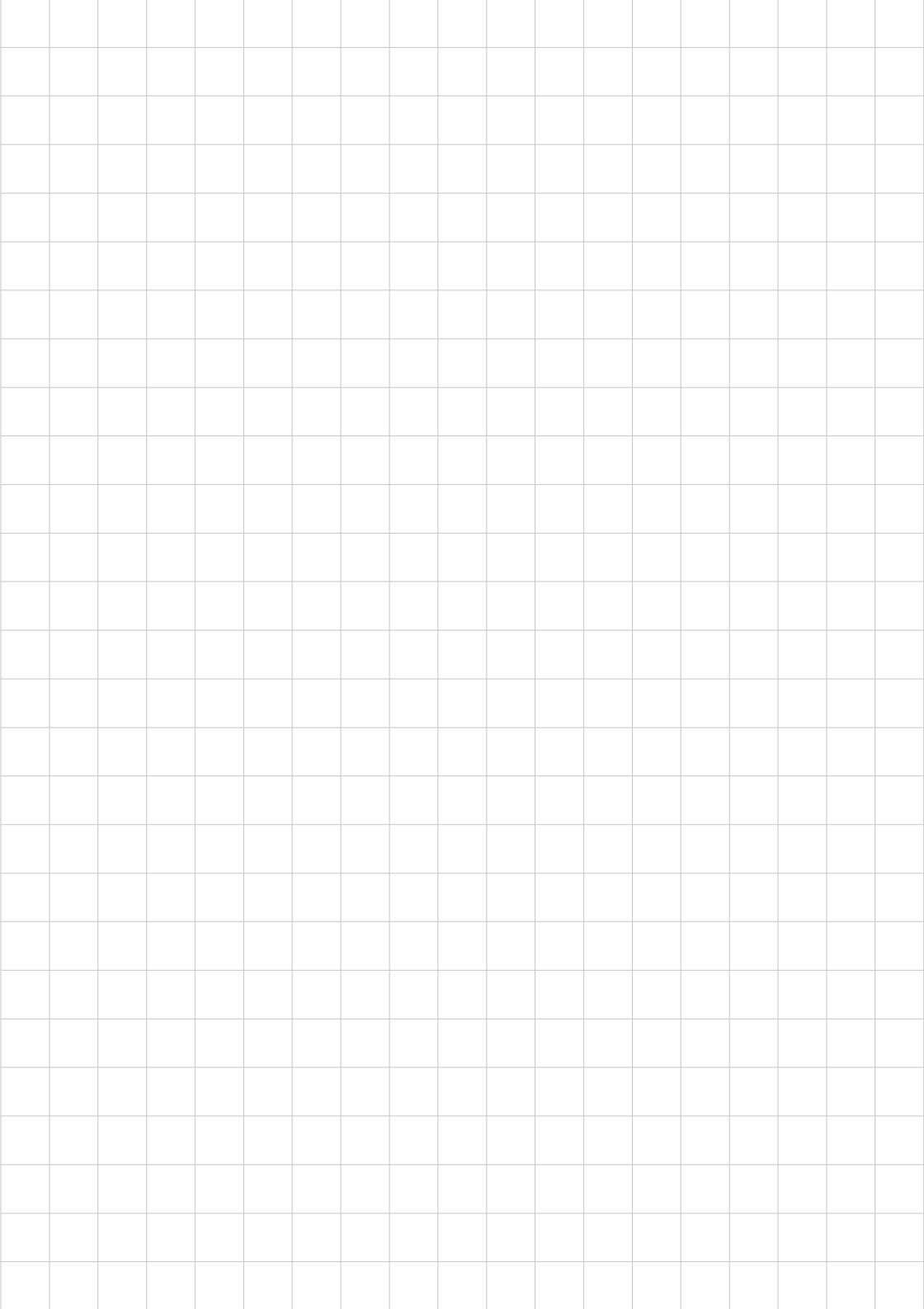


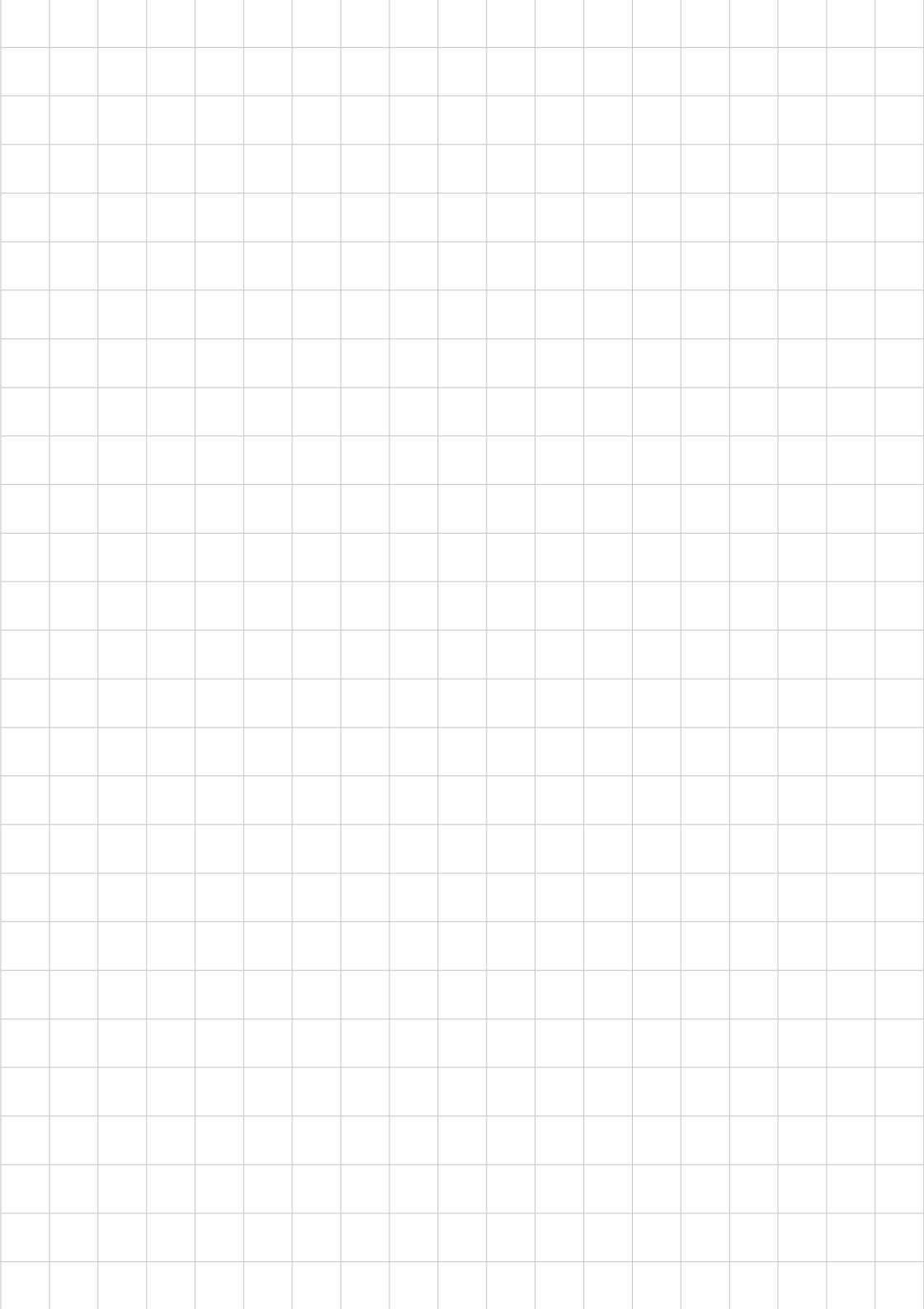


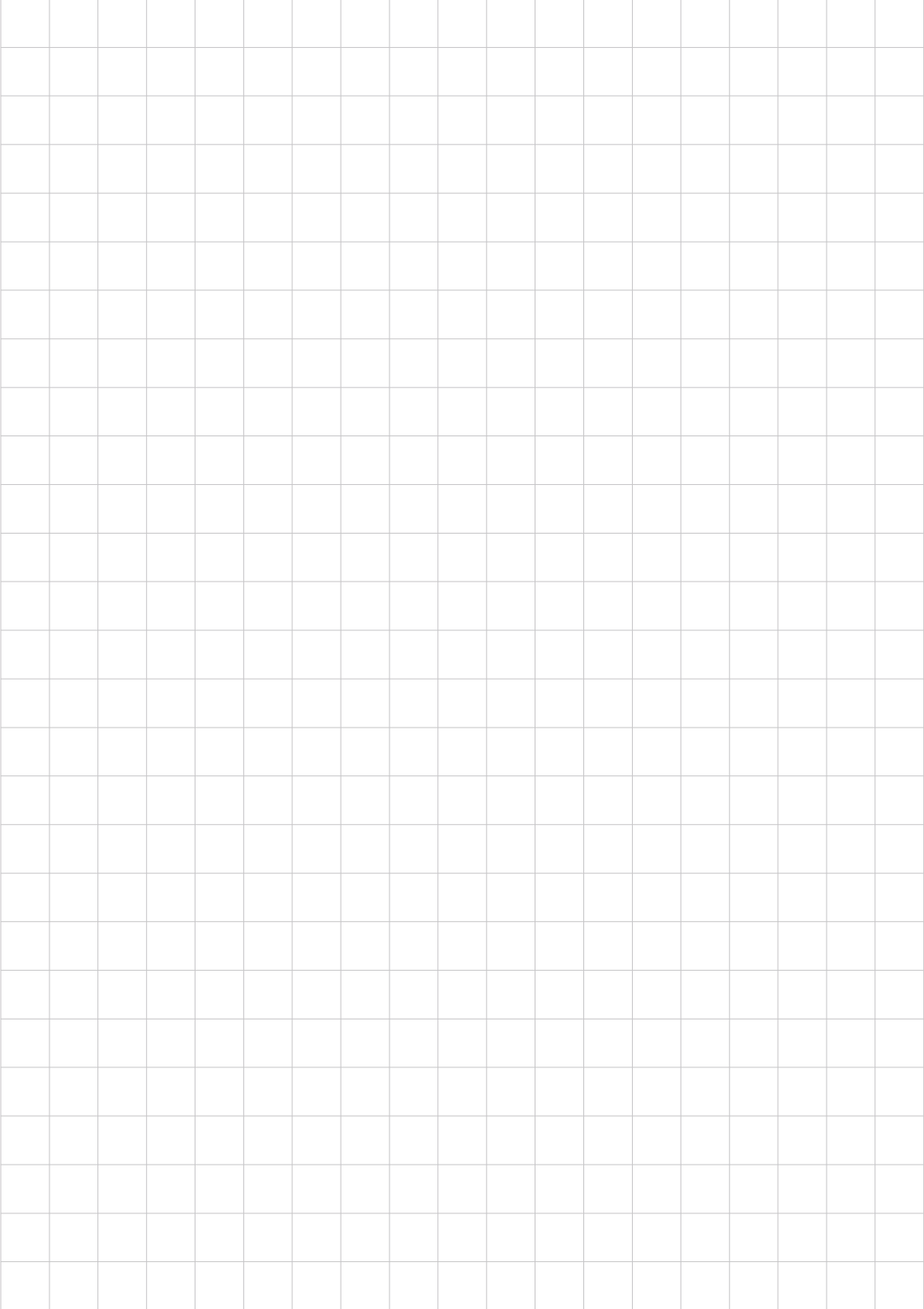


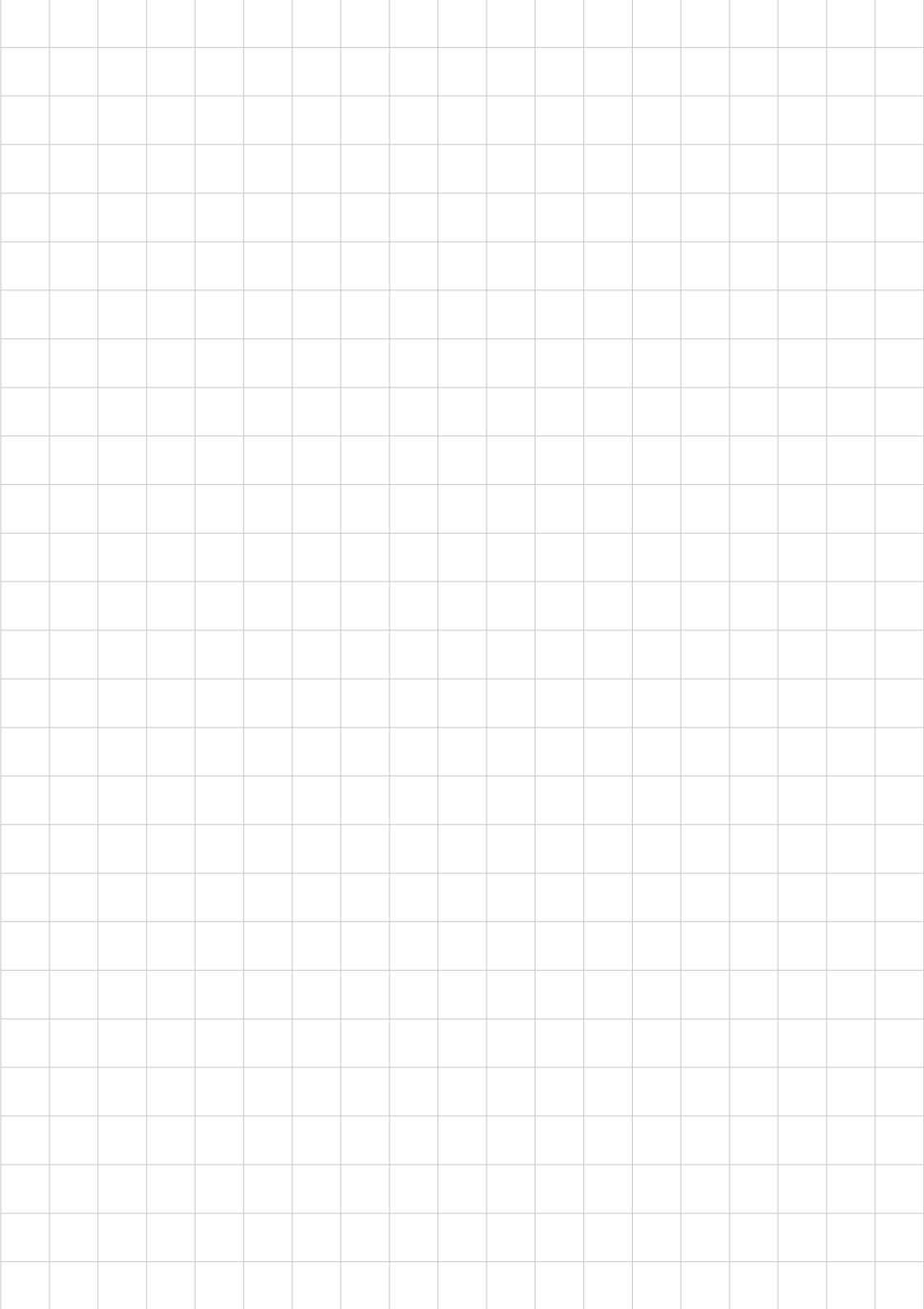


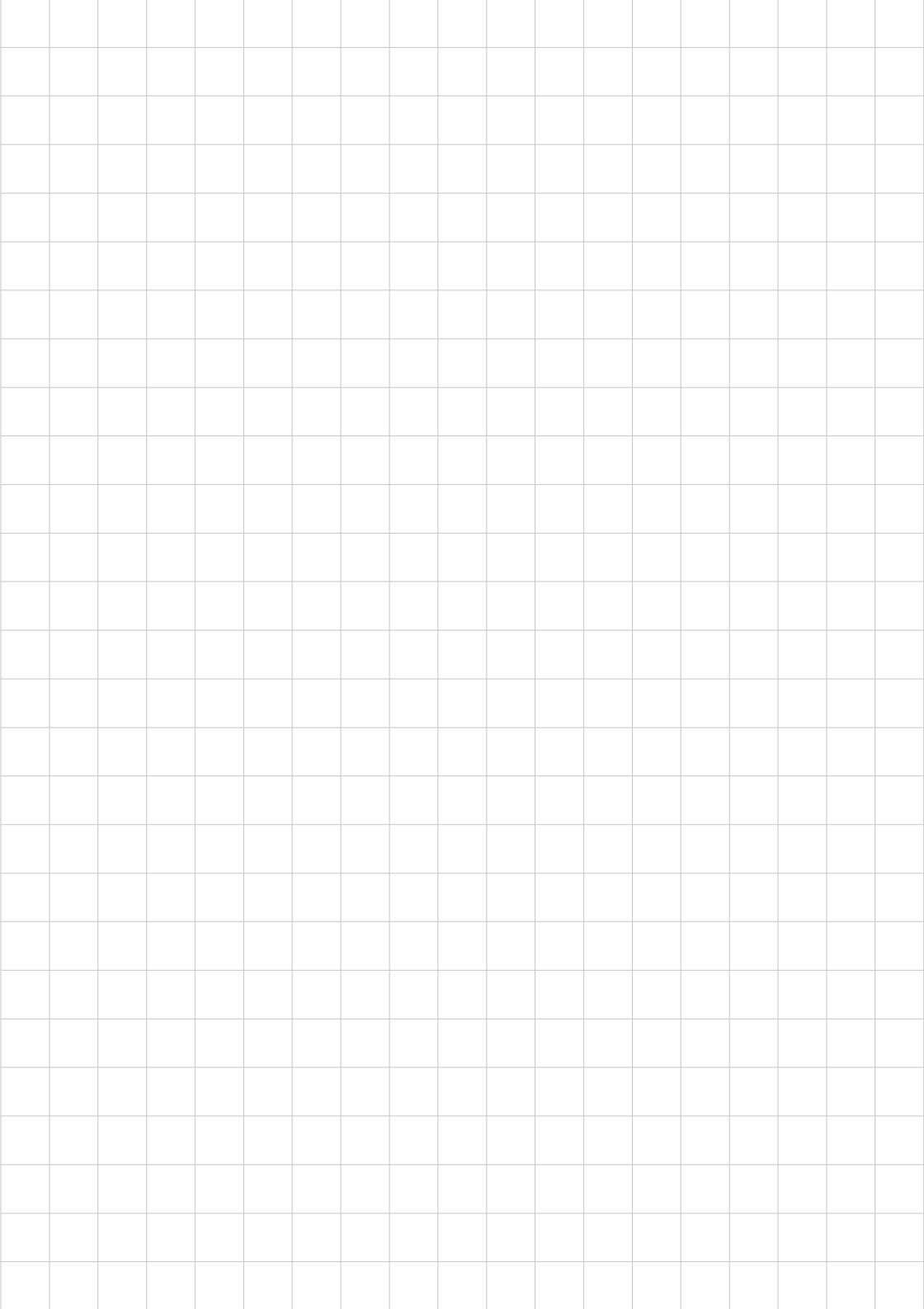


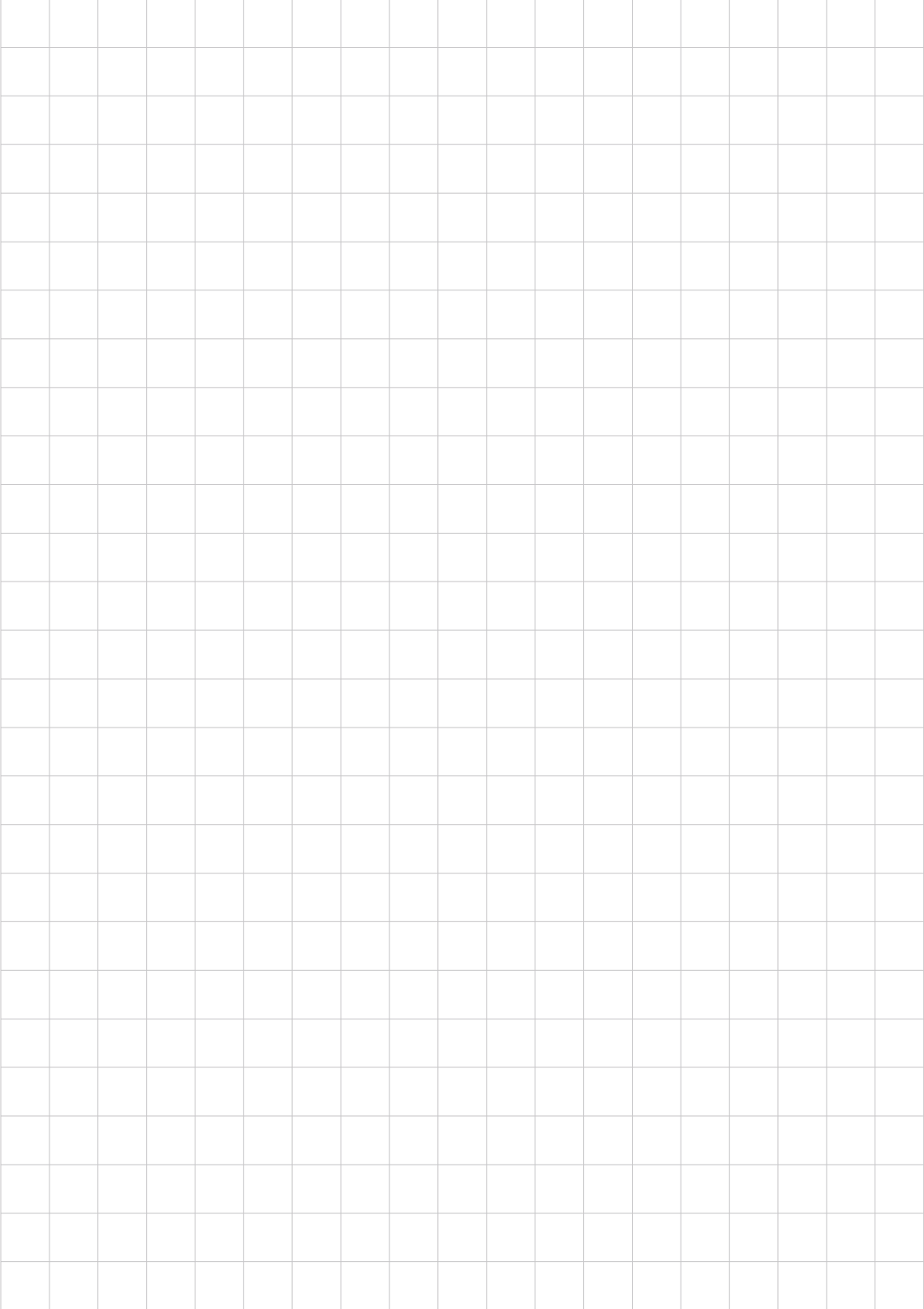


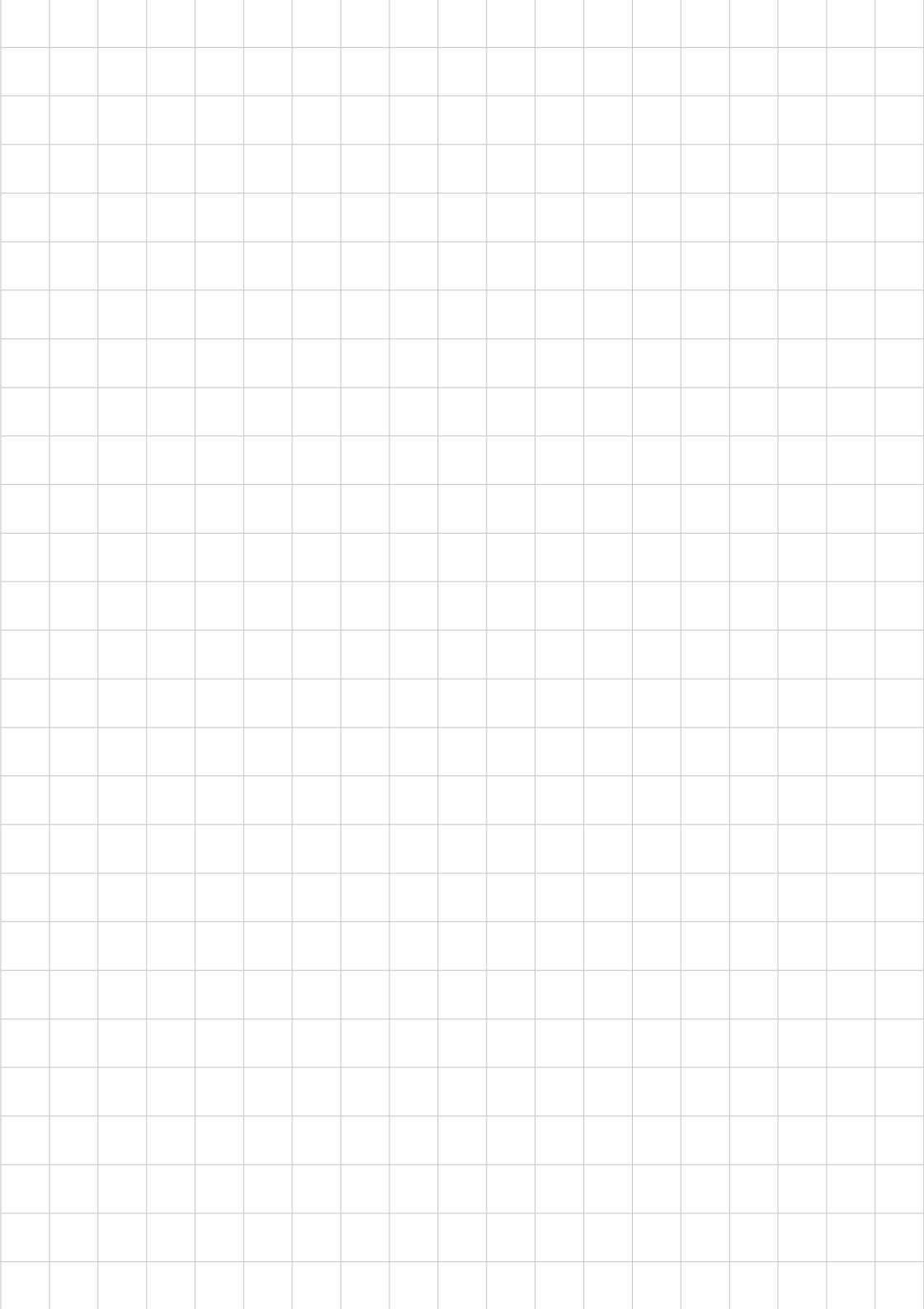


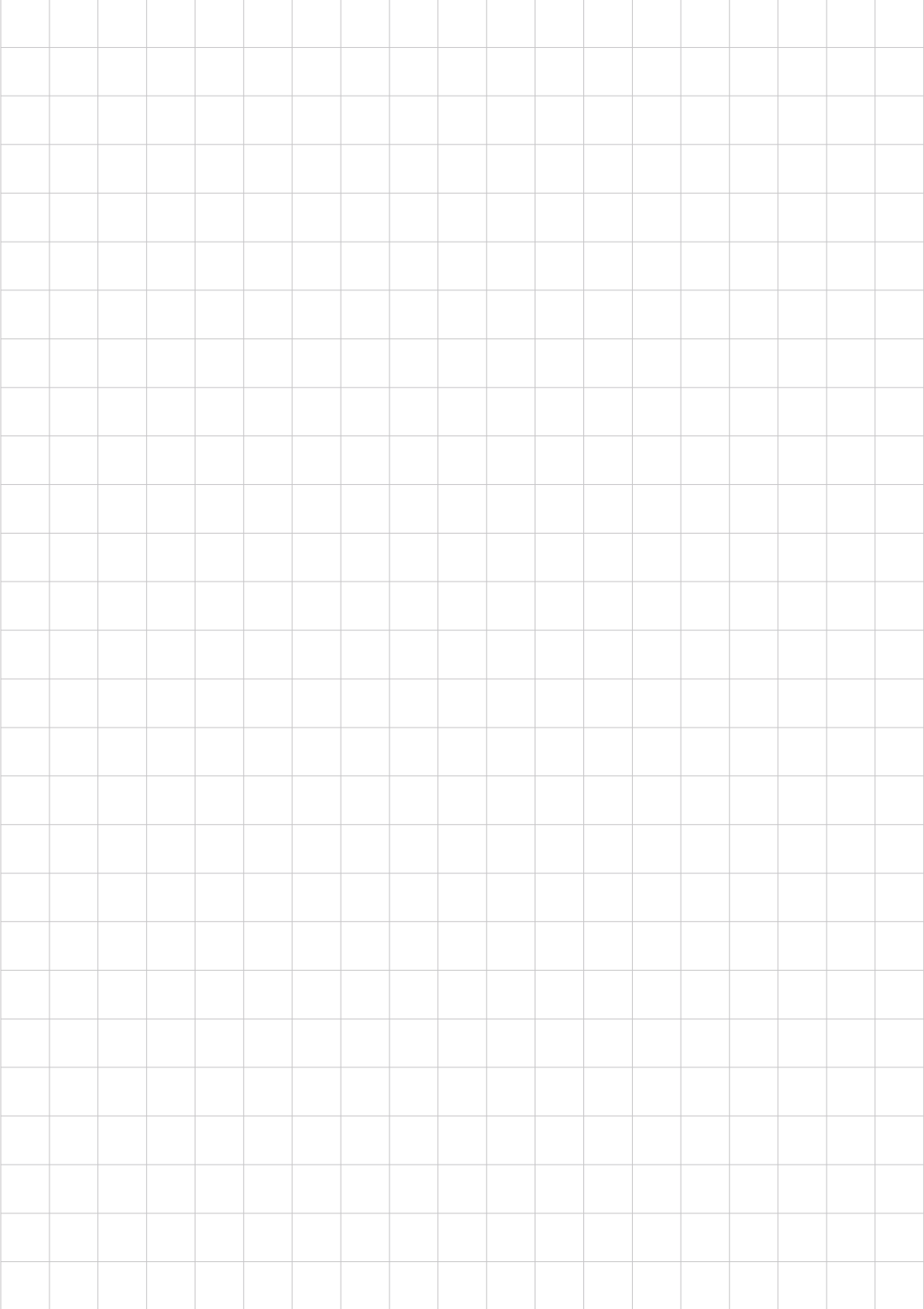


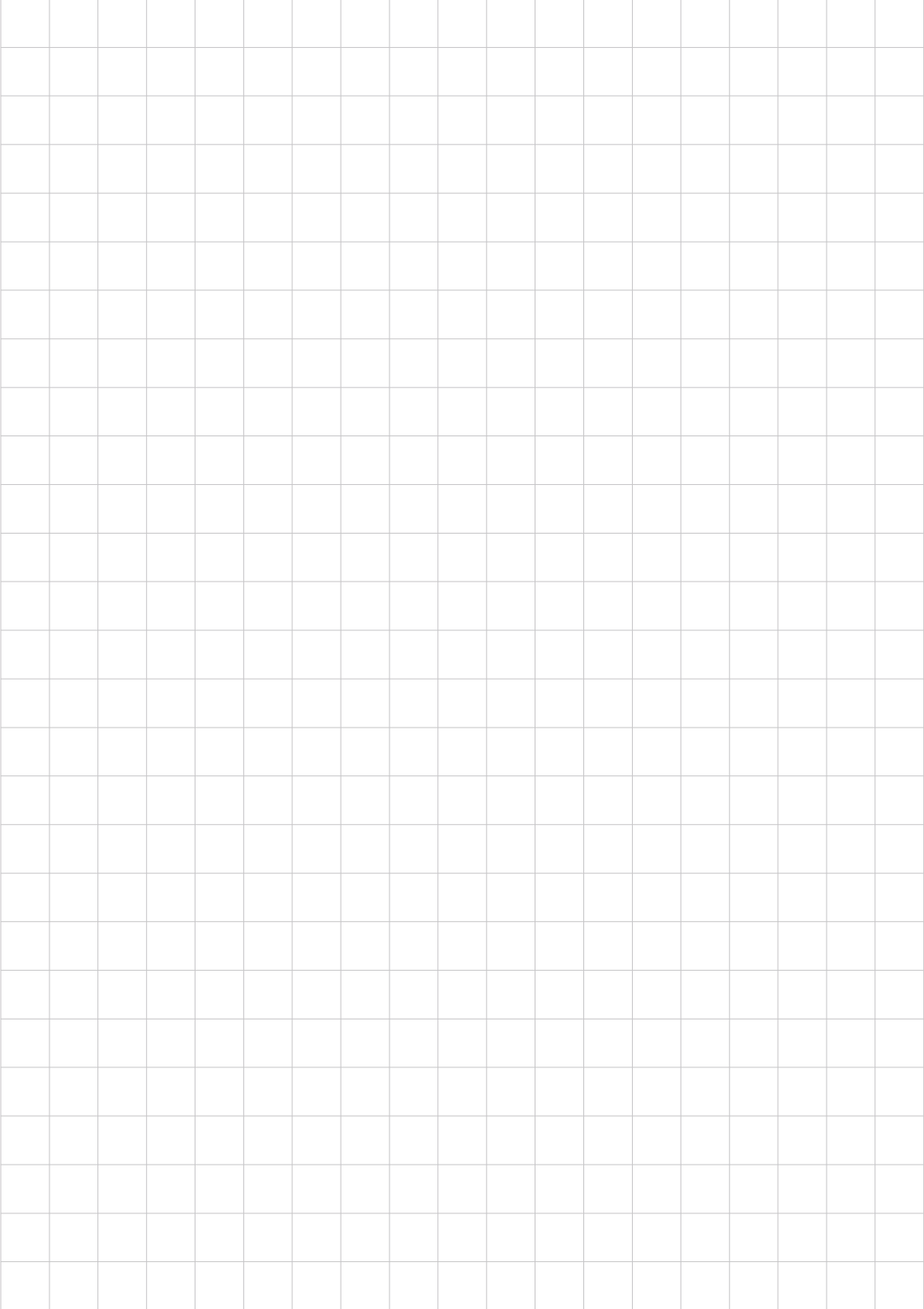


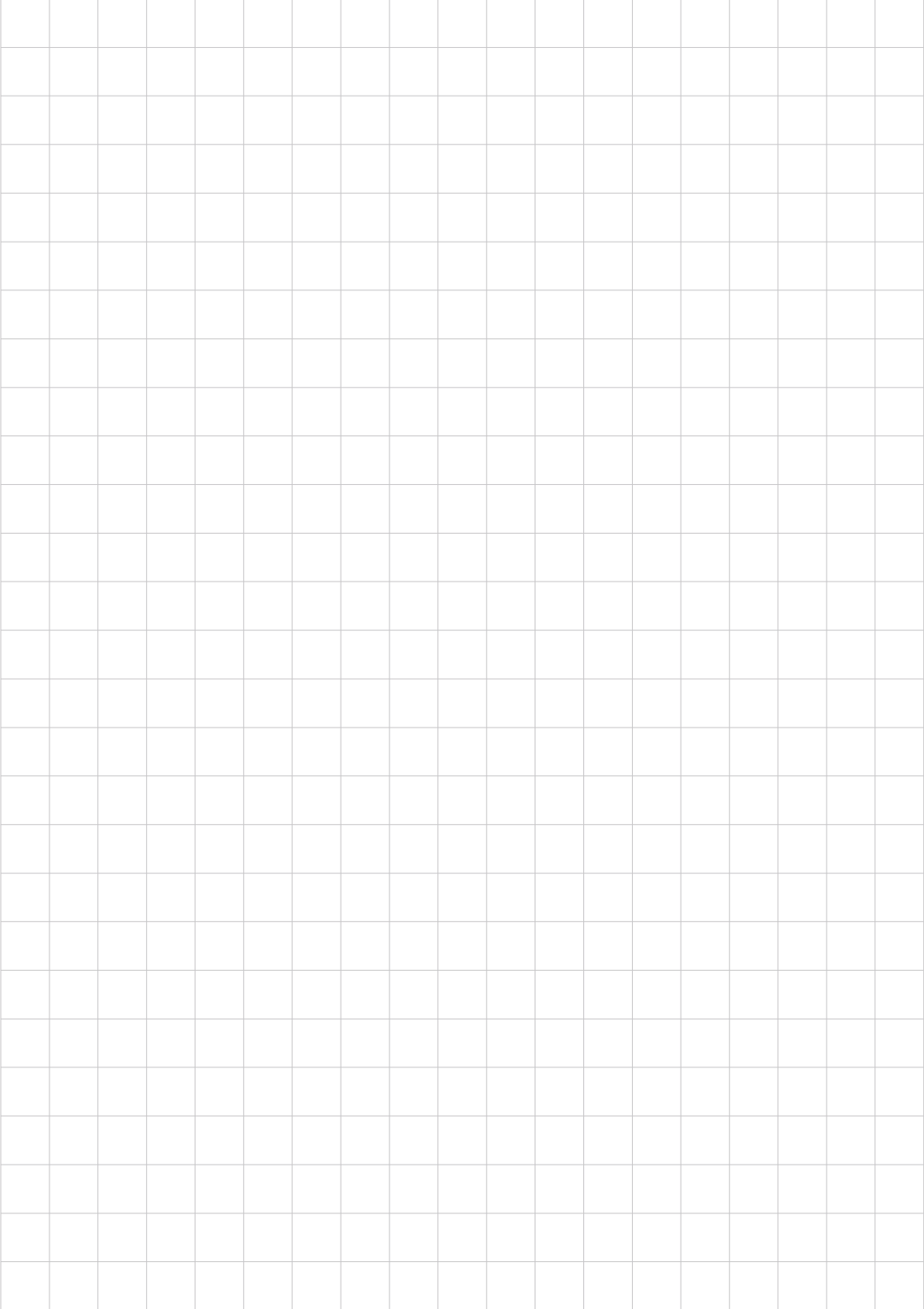


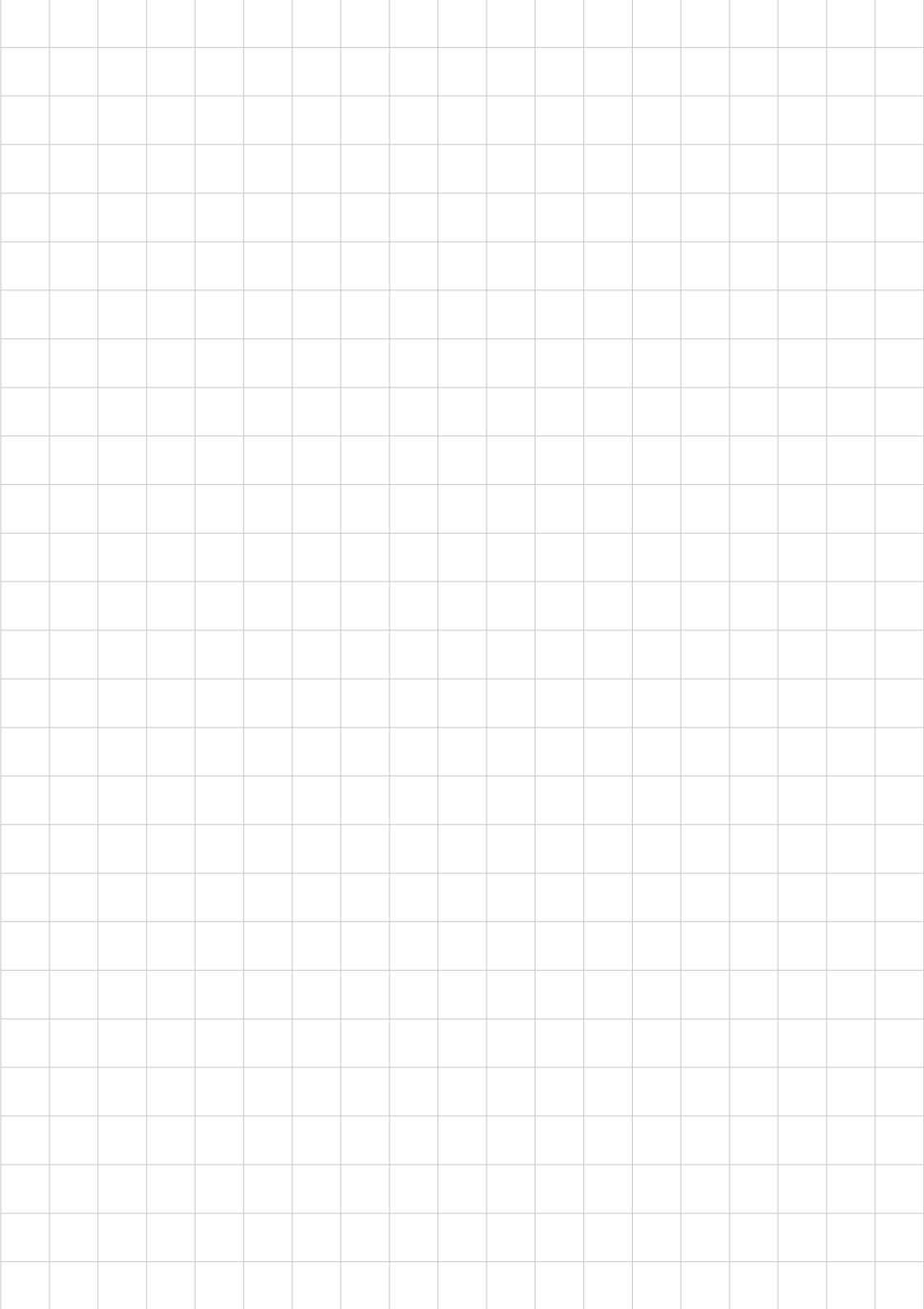


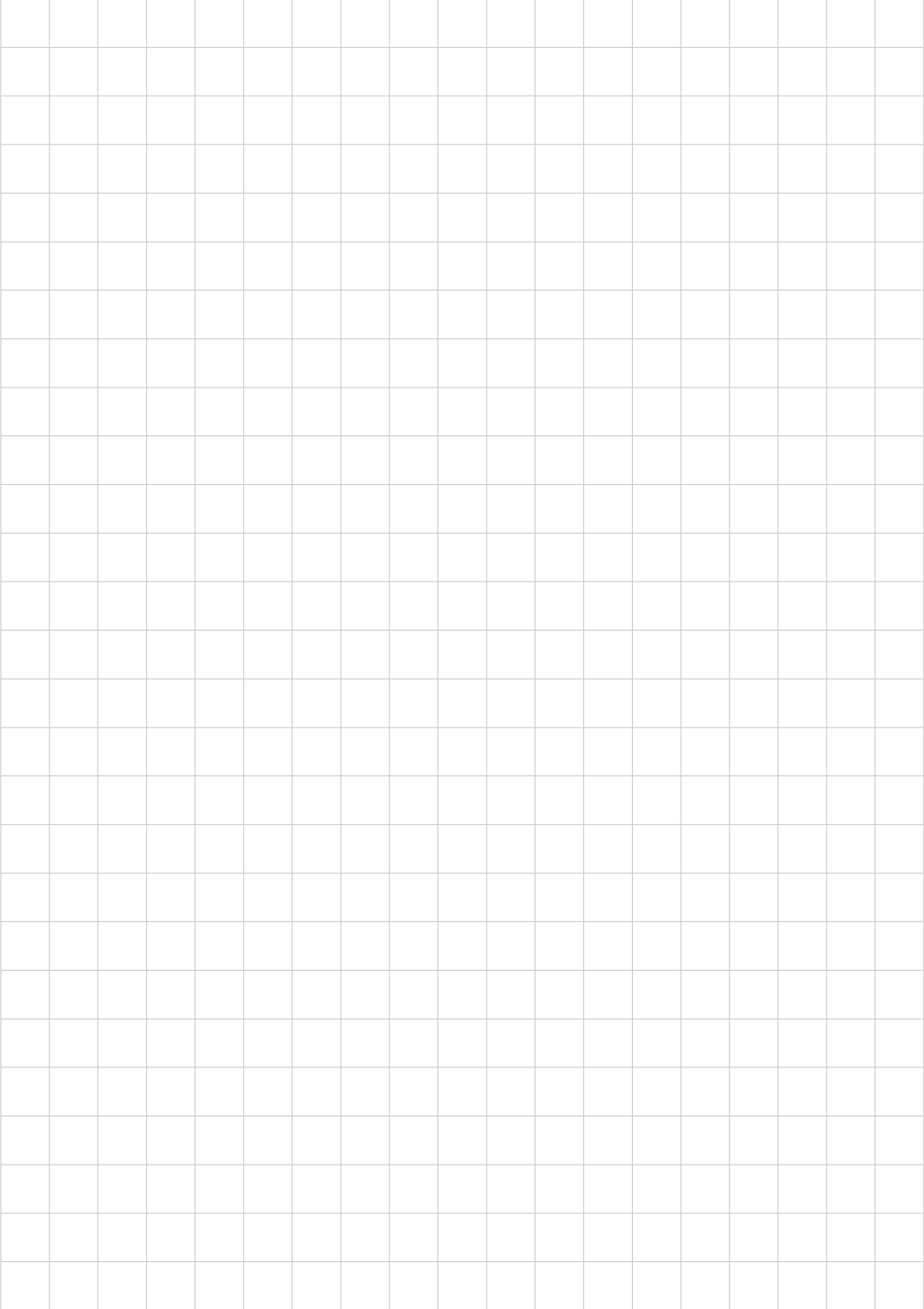


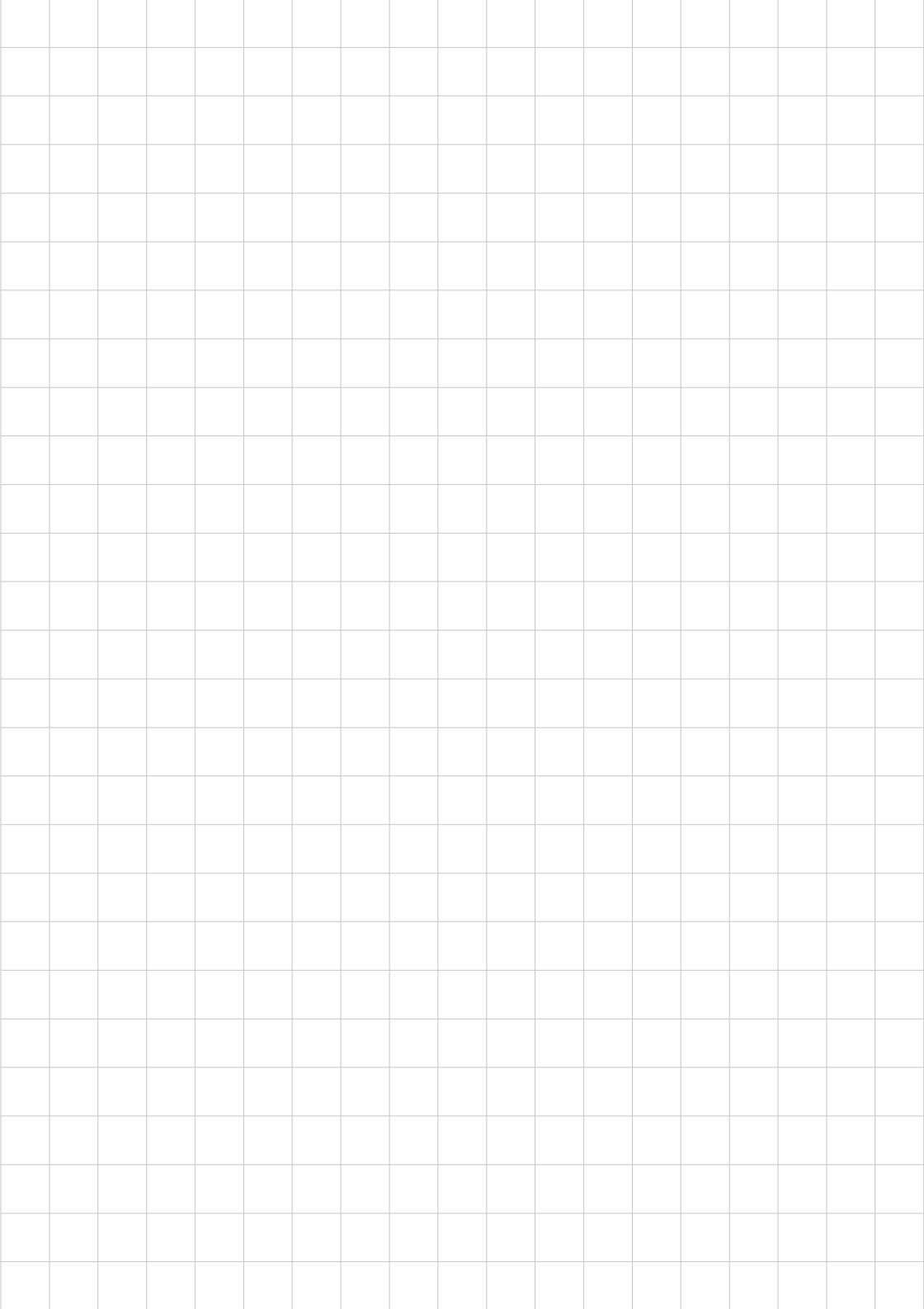


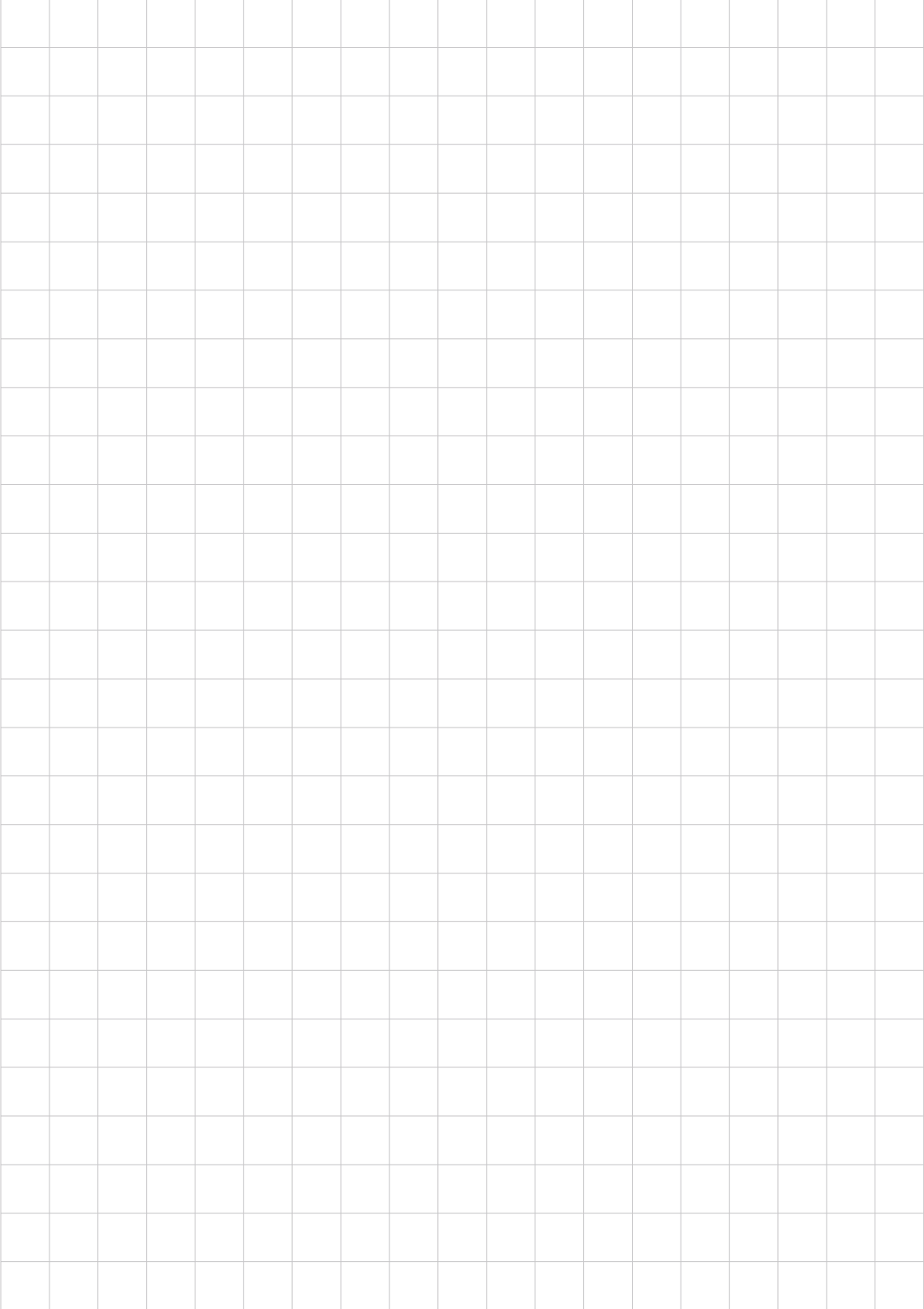


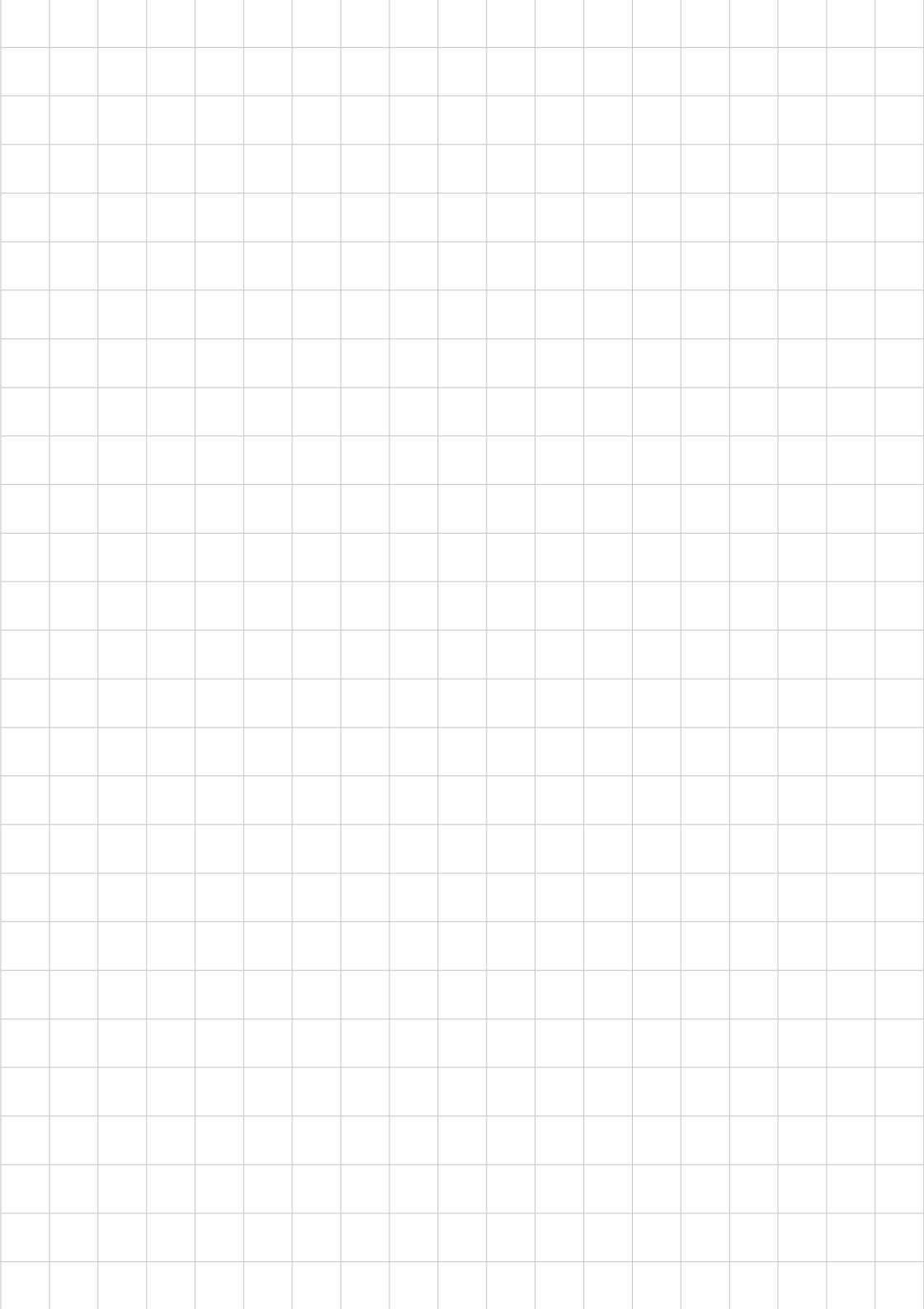












Part	Variant	Specification
Engine oil	Petrol vehicles	SAE 0W-20 meeting Jaguar Land Rover specification STJLR.03.5006.
	Diesel vehicles	SAE 0W-30 meeting Jaguar Land Rover specification STJLR.03.5007.

Oil Filter 3.0L P400 Part # LR133455
Oil with filter change = 8.82 L
Oil w/o filter change = 8.71 L
Filter cap Torque specification = 25 Nm

Brake fluid	All vehicles	It is recommended to use Land Rover brake fluid. If unavailable, then a non-petroleum based brake fluid meeting specification DOT4 ISO 4925 Class 6 may be used.
Windscreen washer fluid	All vehicles	Windscreen wash with frost protection.
Coolant fluid	All vehicles	Mixture of 50% water and 50% Havoline XLC anti-freeze, meeting Jaguar Land Rover specification STJLR.651.5003.

Item	Variant	Capacity (litres)
Fuel tank (usable)	2.0L petrol Plug in Hybrid Electric Vehicle (PHEV)	91.1
	Petrol vehicles except PHEV	90
	Diesel vehicles	89
Engine oil refill and filter change	2.0L petrol	7.0
	3.0L petrol	8.8
	2.0L diesel	7.0
	3.0L diesel	9.8
Diesel Exhaust Fluid (DEF)	Diesel vehicles with DEF	20.7
Washer fluid reservoir	All vehicles	6.25

Default Master Pin: 1926

Reset Oil Service indicator:

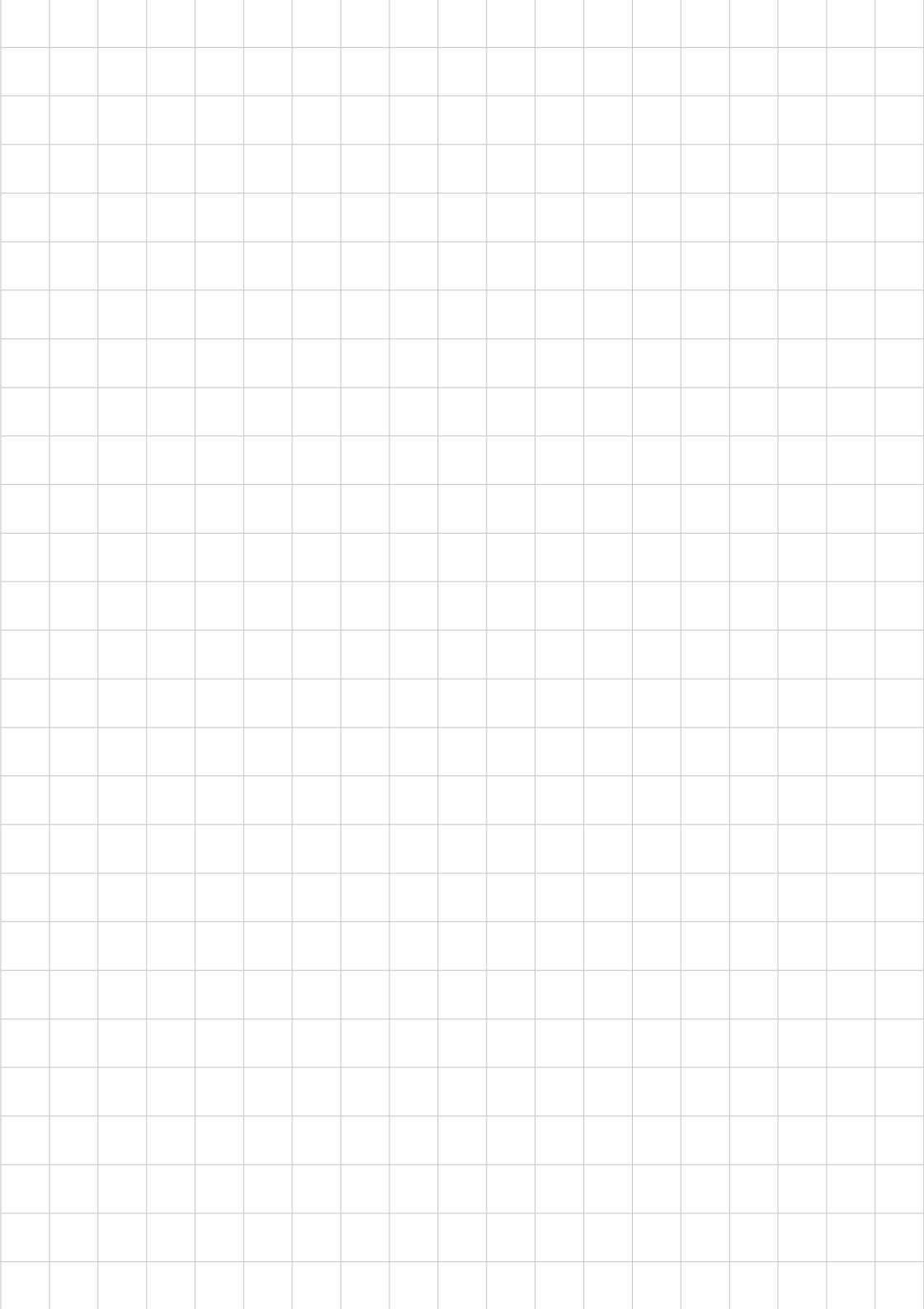
1. Turn ignition on without starting the engine (press Start / Stop button without pressing the brake pedal).
2. Open the driver's door.
3. Open the hood/bonnet.
4. Fully press the brake pedal, THEN the accelerator pedal and hold them fully pressed together for about 10 seconds (make sure the brake pedal is pressed before the gas pedal, or the routine will fail).
5. A "Service Counter Resetting" message should pop up followed by "service counter reset" in the instrument cluster.
6. Release accelerator and brake pedals, turn ignition off.
7. Turn ignition back on and check to make sure the service message is gone.
8. Close the hood and driver's door. If message is still there, repeat the procedure.

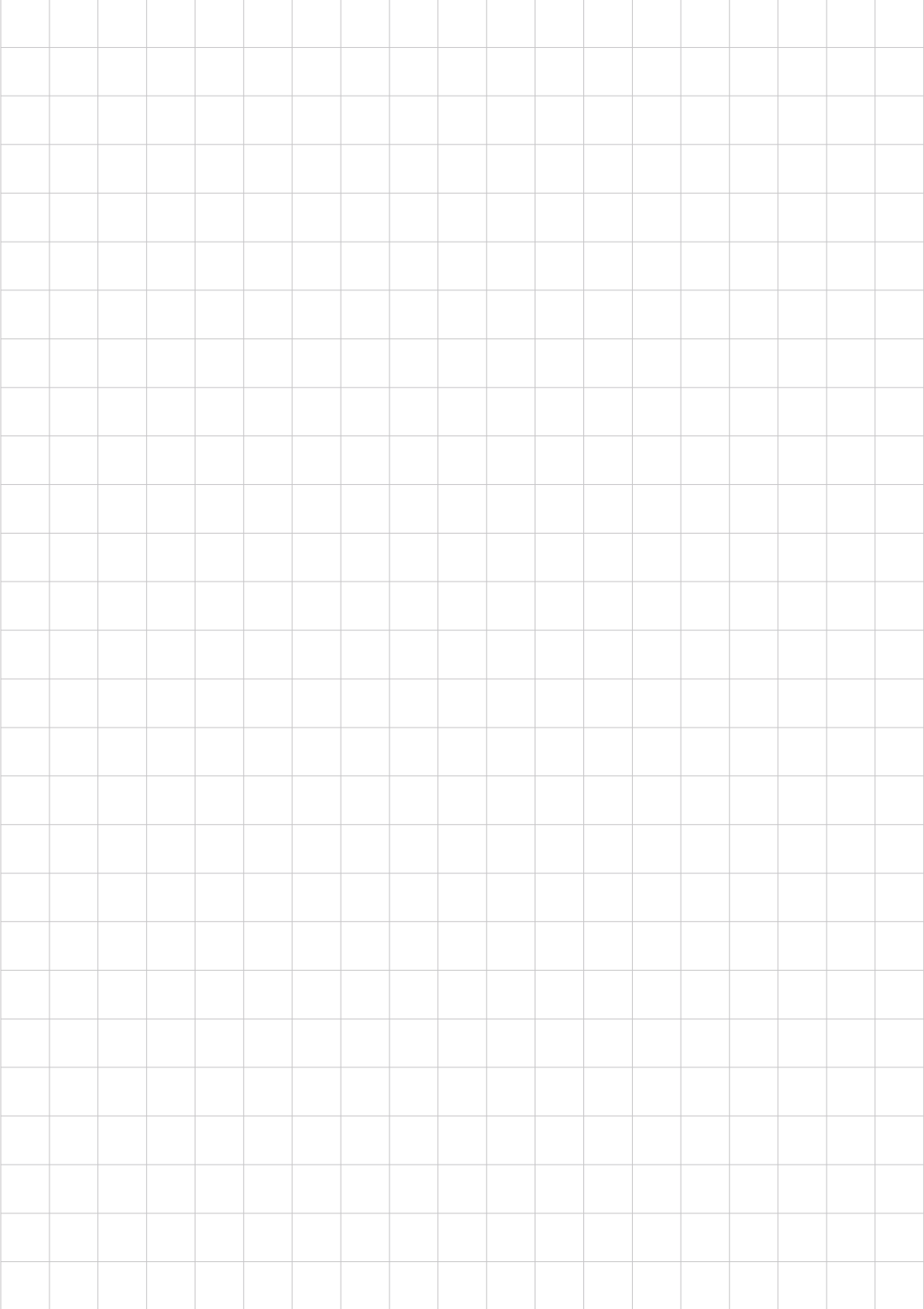
Open the Radiator Flaps to clean Radiator:

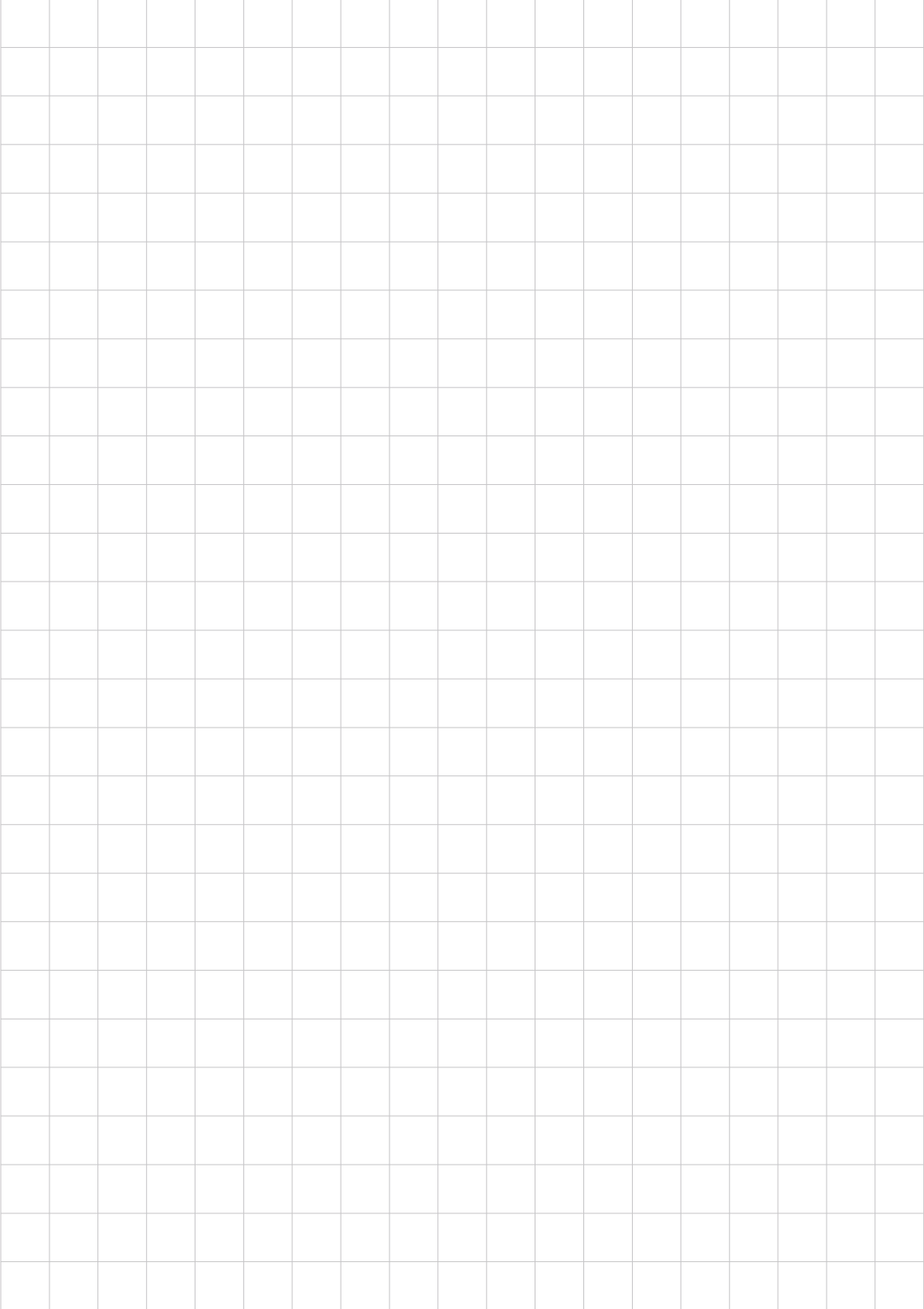
1. Start and run the Engine.
2. Stop Engine and set ignition to OFF.
3. Set the Ignition to ON (without stepping on the brake).
4. Select Terrain Response to SAND MODE.
5. Wait 20 seconds for the radiator flaps to fully open.
6. Set Ignition to OFF.

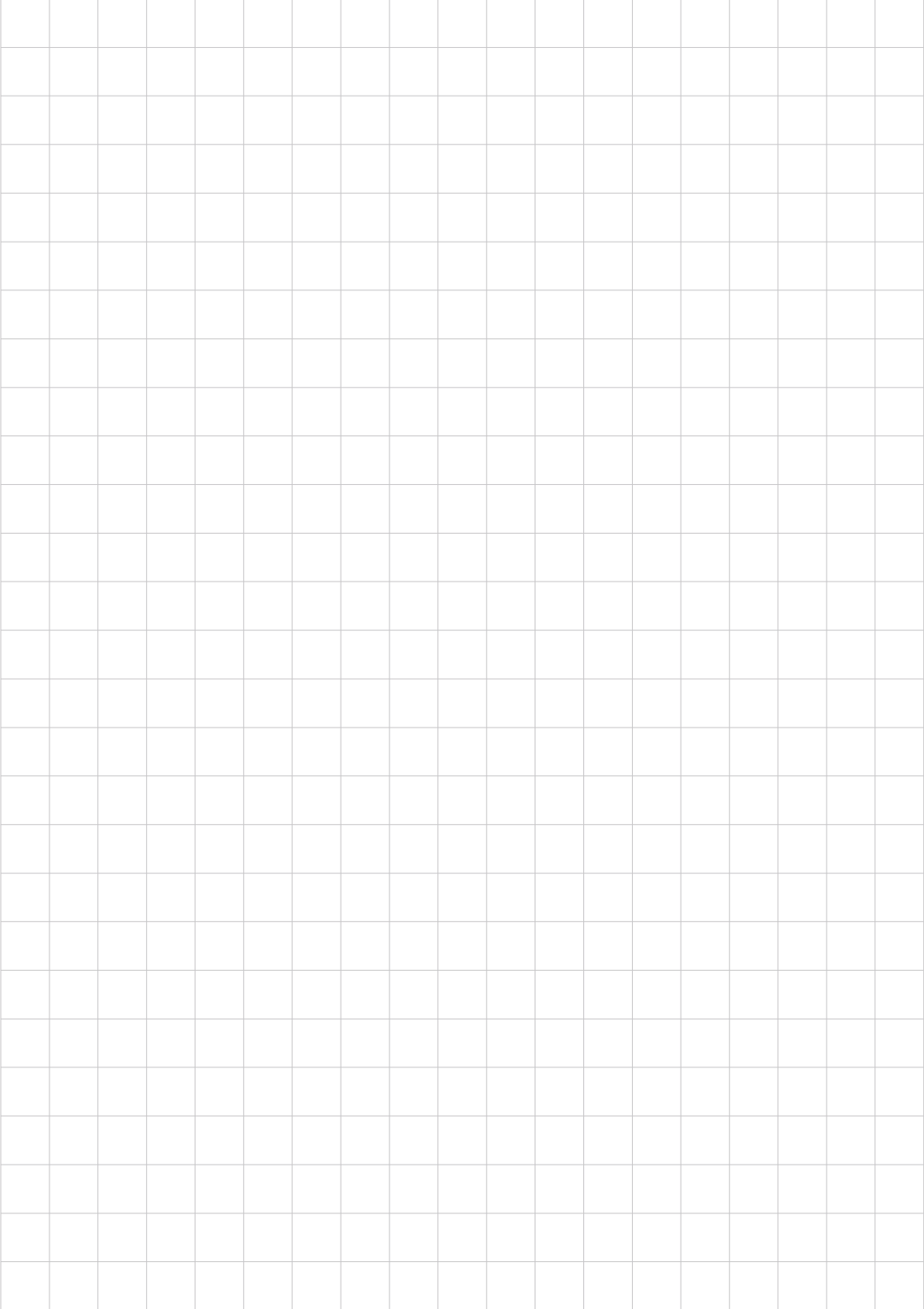
Put wipers into Service Position:

1. Make sure the vehicle's ignition is switched off.
2. Switch the vehicle's ignition on and then off again.
3. Immediately press the wash/wipe control to its lowest position, as if to command a single wipe. Hold this position while switching on the vehicle's ignition again. The wipers move to the service position.
4. When the new parts have been fitted, switch the vehicle's ignition off. The wipers return to the park position.









Vehicle Recovery Guide

INTRODUCTION

⚠️ WARNING

The vehicle recovery (towing) guide is designed to be used by qualified vehicle recovery (towing) personnel only.

Disclaimers

The information contained within this recovery guide was correct at the time of print. In the interest of development, the right is reserved to change specifications, design, or equipment, at any time, without notice and without incurring any obligations. For the latest information, refer to:

<https://topix.landrover.jlrext.com>.

Appropriate service methods are essential for the safe and reliable recovery of all motor vehicles, as well as the safety of the person doing the work. The vehicle recovery guide provides general directions for safe and effective vehicle recovery.

Symbols used in this guide



This safety alert symbol precedes any safety message about a risk of personal injury. It will also have one of the following signal words.

⚠️ DANGER

Indicates a hazardous situation that, if not avoided, will result in death or serious injury.

⚠️ WARNING

Indicates a hazardous situation that, if not avoided, could result in death or serious injury.

⚠️ CAUTION

Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

NOTICE

Indicate either a procedure which must be followed precisely, or information that should be considered with great care, in order to avoid the possibility of damage to the vehicle.

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VEHICLE RECOVERY

Vehicle inspection process

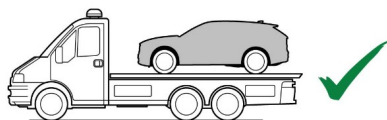
To avoid any later disputes, before recovery of a vehicle, inspect the interior and exterior for damage. Make a record of any damage you find and advise the owner or driver accordingly. Even minor damage can be expensive to repair, so make sure you carefully examine all areas of the vehicle.

Vehicle recovery preparation

Wear clean gloves and fit suitable protective covers on the seat(s) and floor before driving the vehicle or operating the controls.

Recovery method

Transporter or trailer:



E203234

Vehicle Recovery Guide

The recommended method for recovery or transportation of the vehicle is on a transporter or trailer designed for that purpose.

Straight bar tow on all wheels:



E206028

If the vehicle cannot be recovered by using the recommended method, in an emergency, the vehicle can be towed on all four wheels for a short distance.

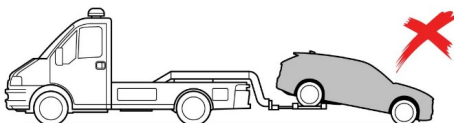
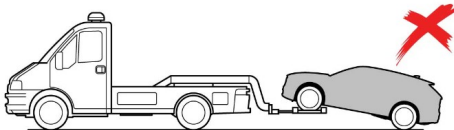
NOTICE

Do not tow the vehicle on all four wheels unless it is essential e.g., in an emergency.

NOTICE

Do not tow the vehicle for more than 30 miles (50 km). Do not exceed 30 mph (50 km/h). Towing for a greater distance or at a higher speed may result in serious damage to the transmission.

Tow with front or rear wheels suspended:



E206029

⚠ WARNING

Make sure that vehicle recovery or transportation is carried out by suitably qualified personnel and the vehicle is secured correctly.

NOTICE

Do not recover the vehicle with the front or rear wheels suspended. Where circumstance requires an exception can be made for 2 Wheel Drive (2WD) derivatives.

NOTICE

The recovery agent must activate the transmission park release before recovery starts. Failure to activate the transmission park release can result in serious transmission damage.

NOTICE

During vehicle recovery, the smart key must remain inside the vehicle and the ignition must be switched on. This is to make sure that the steering column is unlocked.

NOTICE

The vehicle should not be towed on all four wheels and should not be recovered with the front or rear wheels suspended. Doing so can result in serious transmission damage.

Note: If the vehicle's battery is to be disconnected, the steering column must be unlocked first. The steering column cannot be unlocked with the battery disconnected.

Vehicle Recovery Guide

Note: For vehicles with **Secure Tracker**, make sure that the owner is advised to place the vehicle in to **Transport Mode** using the **Land Rover InControl Remote Smartphone App**, or via the InControl website. Transport mode prevents stolen vehicle tracking alerts being raised while the vehicle is being transported.

Towing points

For access to the front towing eye, see **27, FRONT TOWING EYE**.

For access to the rear towing eye, see **28, REAR TOWING EYE**.

TRANSPORTING THE VEHICLE

⚠ WARNING

Use extreme caution when moving or towing the vehicle. Death or serious injury may occur.

NOTICE

Only use the tie-down points or over-wheel straps. Using straps over the body or suspension is not permissible, as settling of the suspension causes the tie-down straps to loosen.

NOTICE

The vehicle should not be towed on all four wheels and should not be recovered with the front or rear wheels suspended. Doing so can result in serious transmission damage.

The recommended method for recovery or transportation of the vehicle, is on a flatbed towing truck.

ELECTRIC PARKING BRAKE (EPB) RELEASE

⚠ WARNING

Chock the wheels and make sure that all personnel are clear of the vehicle before carrying out the following procedure.

If the Electric Parking Brake (EPB) does not release, because of a system fault or flat battery, for example, operate the emergency release procedure. Disengage the EPB, as follows:

Note: The use of other methods such as starting aids, jump leads, and dollies may negate the need to perform this procedure.

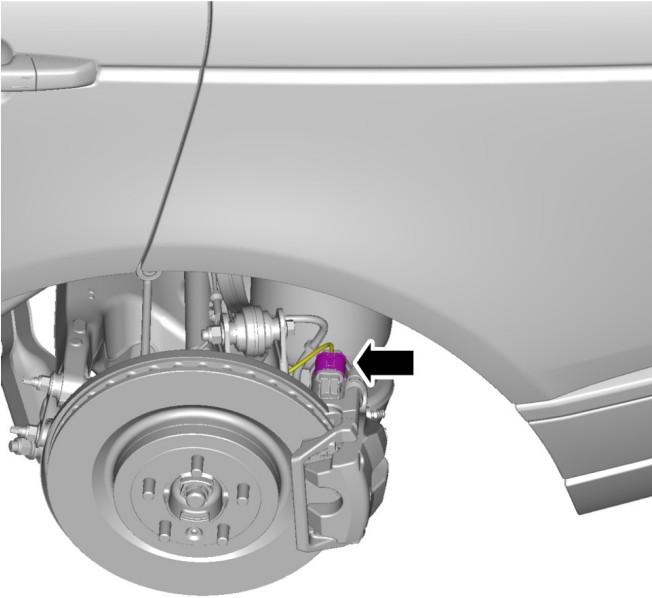
Deactivation

- Disconnect the vehicle battery.
- Raise and support the vehicle.

⚠ WARNING

Make sure to support the vehicle with axle stands.

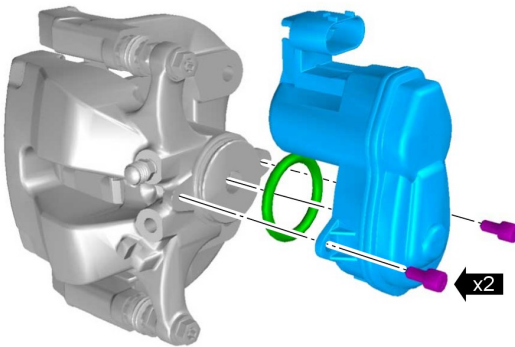
- Remove a rear wheel.
- Release the electrical connector.



E146982

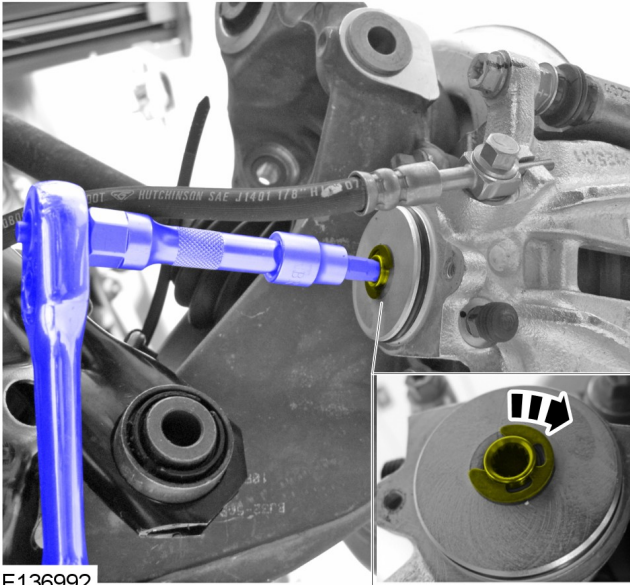
Remove and discard the two bolts securing the EPB actuator to the brake caliper.

Torque: 11 Nm.



E146983

- Remove the EPB actuator from the brake caliper. Discard the O-ring seal.



- Repeat the procedure for the other side of the vehicle.

Activation

NOTICE

New O-ring seal is to be fitted.

NOTICE

New bolts are to be fitted.

- To refit, reverse the removal procedure.
- Calibrate the EPB using the diagnostic tool. See **9, ON-BOARD DIAGNOSTICS (OBD) CONNECTOR LOCATION**.

TRANSMISSION PARK RELEASE

⚠ WARNING

Make sure that the vehicle is secured with wheel chocks. Apply the Electric Parking Brake (EPB), or have another person firmly press and hold the brake pedal. Failure to do so can result in unexpected movement of the vehicle, causing serious injury or death.

NOTICE

Failure to release the automatic transmission from Park (P) before recovering the vehicle, can result in serious damage to the automatic transmission.

Vehicle Recovery Guide

Unlocking with the activity key

On returning to the vehicle, swipe upwards to access the activity key's **Locking** menu. Pressing the unlock symbol unlocks and disarms the alarm system. The hazard warning lights flash to confirm. If the power-fold mirrors are enabled, they unfold.

Note: When the vehicle is unlocked with the activity key, any valid smart key inside the vehicle re-enables.

Other activity key functions

The activity key can also be used as follows:

- Select the **Settings** menu to change the activity key displayed time. Select the clock symbol, and adjust the time using the up/down arrows as desired.
- To sound the panic alarm, briefly touch the screen 3 times in quick succession.

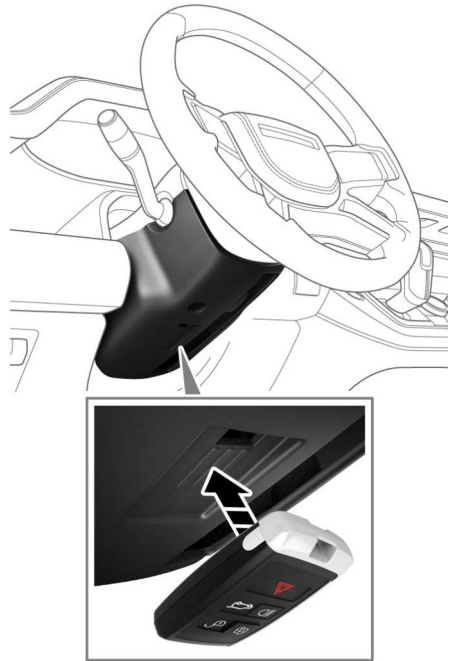
Note: The panic alarm cannot be canceled during the first 5 seconds of operation. Once this 5 seconds has passed, the panic function on the key will de-activate the panic alarm.

ENGINE START BACKUP

The engine start backup feature is required to disarm the alarm and start the engine if either of the following occur:

- The vehicle is unlocked using the emergency key blade.
- The smart key is not detected by the vehicle.

The engine start backup feature can only be used when the instrument panel displays **Place Smart Key as shown, and press start button.**



E246822

To carry out the engine start backup procedure:

1. Position the smart key flat against the side of the steering column.
- Note:** There are markings on the steering column to help locate the correct position.
2. While holding the smart key in position, firmly press the brake pedal.
 3. Press and release the engine **START/STOP** button.

Once the engine starts, release the brake pedal, if it is safe to do so.

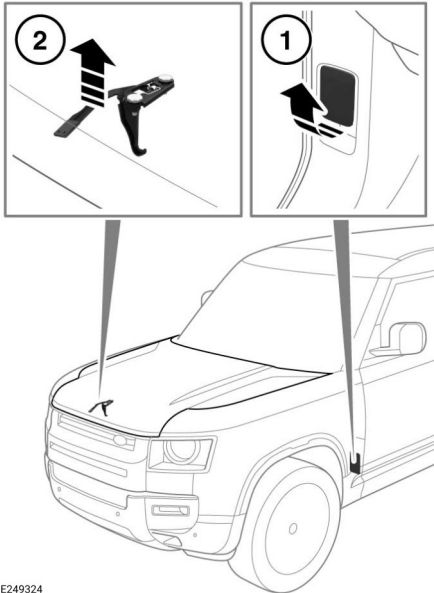
If the smart key is not recognized, or the engine fails to start, consult a retailer/authorised repairer.

Vehicle Recovery Guide

OPENING THE HOOD

⚠️WARNING

Before opening the hood, make sure that the ignition is switched off and the smart key is removed from the vehicle. Failure to do so can potentially result in serious injury or death.



E249324

1. Pull the handle, located in the left front footwell.
2. Pull the hood safety catch, located underneath the center of the hood at the front. Raise the hood.

CLOSING THE HOOD

⚠️WARNING

Before closing the hood, make sure that no-one is obstructing the closing area and that hands and clothes are clear. The closing hood may cause serious injuries.

⚠️WARNING

Do not drive with the hood secured by the safety catch alone. If the hood opens while driving, it may lead to a collision, which may cause serious injuries or death.

⚠️WARNING

When closing the hood, make sure to stand in front of the vehicle. Do not attempt to close the hood while standing at the side of the vehicle. Doing so may result in incorrect latching of the hood, which may cause serious injuries or death.

To close the hood:

1. Using both hands, lower the hood and let it drop from a height of between 8 to 20 in (20 to 50 cm).
2. Try to lift the front edge of the hood, near both corners, to check that it is securely engaged.
3. If the hood lifts slightly, it is not properly latched. Open the hood again, and with a little more force, try again to close it.

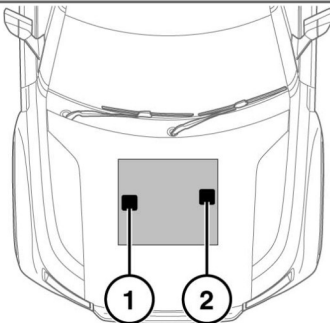
Vehicle Recovery Guide

NOTICE

When vehicle recovery is complete, make sure to return the automatic transmission to **P** and refit the engine cover.

In the event that a vehicle with an automatic transmission needs to be recovered, it is essential that the transmission park release system is activated. This locks the automatic transmission in Neutral (**N**) and prevents the automatic transmission from automatically selecting **P**. The engine cover will need to be removed for access.

When the transmission park release system is activated, the automatic gear selector remains in **P**, but the automatic gear selector indicator and the instrument panel both display a flashing **N**.

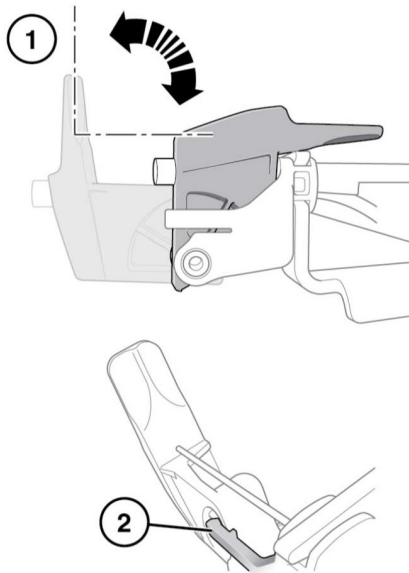


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The transmission park release lever is located on the engine.

1. 3.0L gasoline.
2. All engines, except 3.0L gasoline.

Transmission park release lever operation



E167134

To release the automatic transmission from **P**:

1. Make sure the vehicle is suitably secured using an appropriate method e.g., wheel chocks. Gradually pull the lever up, approximately 90 degrees to the vertical position.

NOTICE

Do not apply excessive force to the handle, and do not pull the handle up more than 90 degrees. Either action may damage the transmission park release system.

2. The securing latch engages to hold the handle in the vertical position.

FLUID FILLER LOCATIONS

⚠️ WARNING

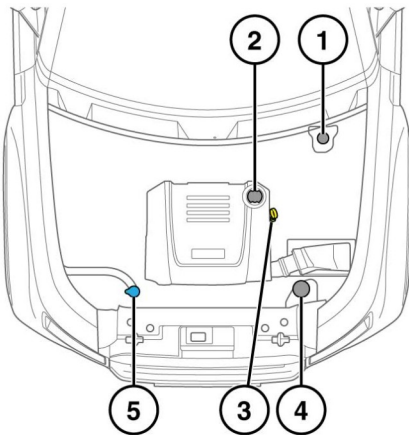
Do not start the engine, or drive the vehicle, if leaked fluid could possibly make contact with a hot surface. Any leaked fluid coming into contact with a hot surface, such as the exhaust, could result in combustion. Seek qualified assistance immediately.

Always observe and follow the safety precautions when working in the engine compartment. Failure to do so may result in serious injury or death.

Note: Further information on safety precautions can be found in the relevant section of the Owner's Handbook. See the Owner's Handbook.

A number of simple checks and routine maintenance must be carried out at regular intervals. See the Owner's Handbook.

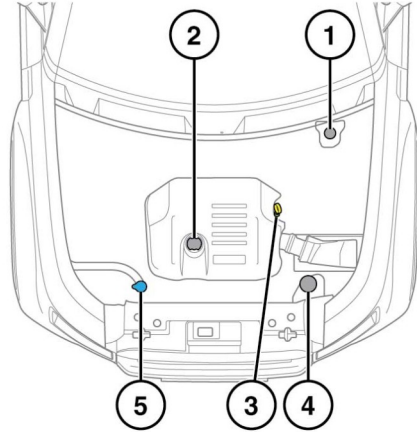
2.0L gasoline engine



E249423

1. Brake fluid reservoir cap.
2. Engine oil filler cap.

3. Engine oil level dipstick.
 4. Engine coolant reservoir filler cap.
 5. Washer fluid reservoir filler cap.
- ### 3.0L in-line 6 cylinder gasoline engine



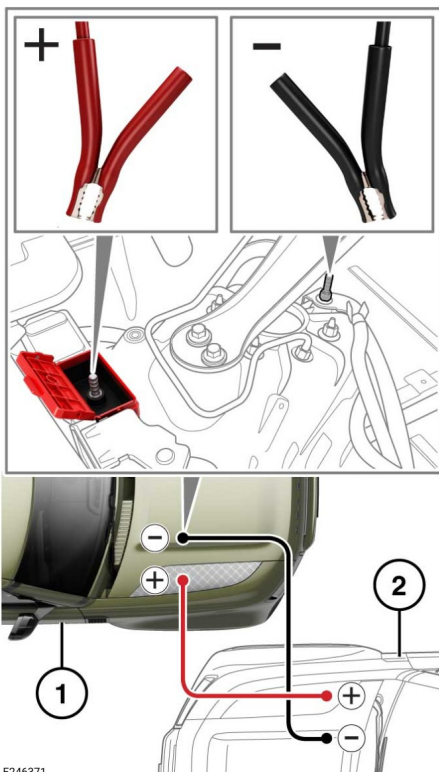
E249425

1. Brake fluid reservoir cap.
2. Engine oil filler cap.
3. Engine oil level dipstick.
4. Engine coolant reservoir filler cap.
5. Washer fluid reservoir filler cap.

CONNECTING JUMP LEADS

⚠️ WARNING

Remove all metal jewelry before working on, or near, a battery or boost terminals. Never allow metal objects or vehicle components to come into contact with the battery or boost terminals. Metal objects can cause sparks or short circuits, resulting in an explosion.



E246371

1. Disabled vehicle.
2. Donor vehicle.

To connect the jumper cables:

1. Connect the positive (red) jump lead to the recommended positive (+) boost point terminal on the donor vehicle.
Note: Refer to the donor vehicle's Owner's Handbook for the recommended positive boost terminal.
2. Connect the other end of the positive (red) jump lead to the positive (+) boost point terminal on the disabled vehicle, as illustrated.

3. Connect the negative (black) jump lead to the recommended negative (-) boost point terminal on the donor vehicle.

Note: Refer to the donor vehicle's Owner's Handbook for the recommended negative boost terminal.

4. Connect the other end of the negative (black) jump lead to the negative (-) boost point terminal on the disabled vehicle, as illustrated.

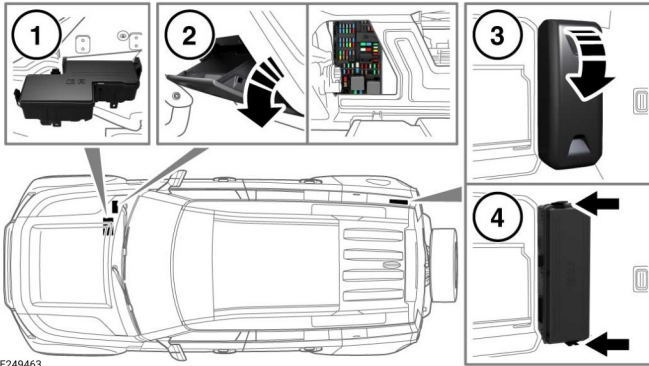
Note: Check that all cables are clear of any moving components and that all four connections are secure.

5. Start the engine of the donor vehicle and allow it to idle for a few minutes.
6. Start the engine of the disabled vehicle.

Note: Do not switch on any electrical circuits on the disabled vehicle until after the jump leads are removed.

7. Allow both vehicles to idle for 2 minutes.
8. Switch off the donor vehicle.
9. Disconnect the negative (black) jump lead from the previously disabled vehicle.
10. Disconnect the negative (black) jump lead from the donor vehicle.
11. Disconnect the positive (red) jump lead from the previously disabled vehicle.
12. Disconnect the positive (red) jump lead from the donor vehicle.

FUSE BOX LOCATIONS



E249463

NOTICE

Take care to protect the box from moisture. Refit the fuse box lid at the earliest opportunity.

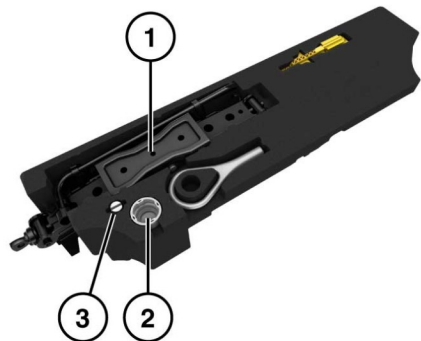
Access the fuses as follows:

1. Engine compartment fuse box:
Remove the under-hood cover. See the Owner's Handbook. Release the four clips to remove the fuse box lid.
Note: The fuse box is always located on the passenger's side of the vehicle.
2. Passenger compartment fuse box:
Open the glovebox. See the Owner's Handbook. Firmly press the top of the support stay at each end and lower the glovebox into the footwell.
Note: The fuse box label for the passenger compartment fuse box is contained within the load space fuse box.
3. Loadspace fuse box cover: Pull the fuse box cover forwards to release the six clips.
4. Loadspace fuse box: Release the two clips to remove the fuse box lid.

TOOL KIT

⚠ WARNING

Make sure the relevant safety warnings have been read and understood before using the tool kit. See the Owner's Handbook.



E246857

The tool kit is located beneath the loadspace floor panel.

The tool kit consists of the following:

1. Jack assembly.

Vehicle Recovery Guide

2. Locking lug nut adapter.
3. Spare wheel alignment tool.



E246858

The jack assembly consists of:

1. Jack: Observe the instructions printed on the jack.
2. Lug wrench.
3. Jack handle.

Note: Tool types and positions may vary from the illustration.

Note: Examine the jack occasionally. Clean and grease the moving parts, particularly the screw thread, to prevent corrosion.

Note: Take careful note of the storage position for each tool, as it is important to return the tools to their correct position after use.

REMOVING THE SPARE WHEEL

Make sure to read and fully understand the following warnings. Failure to comply with the safety instructions may result in an accident, leading to serious injury or death.

⚠ WARNING

Make sure the relevant safety warnings have been read and understood before removing the spare wheel. See the Owner's Handbook.

⚠ WARNING

An open taildoor obscures the rear lights. If available, place a warning triangle at a suitable distance behind the vehicle, facing toward oncoming traffic. See 29, LABEL LOCATIONS.

⚠ WARNING

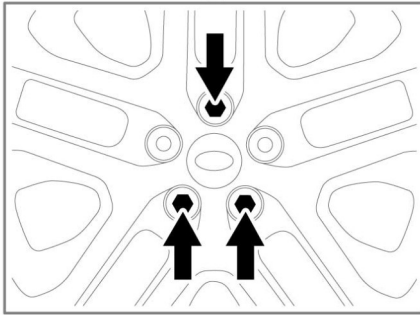
Do not store the wheel while the vehicle is raised on the jack.

⚠ WARNING

Always secure the spare wheel, or the removed wheel, in the correct position, using the three lug nuts.

Note: If in any doubt regarding the ability to remove or secure the spare wheel, seek assistance.

The spare wheel is located on the taildoor. The spare wheel is secured to the vehicle with two locking lug nuts and a third standard lug nut.



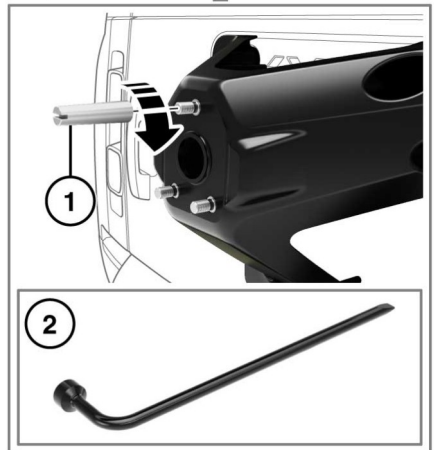
E246859

To remove the spare wheel:

1. Carefully remove the spare wheel's cover.
2. Use the locking lug nut adapter and the lug wrench to remove the two locking lug nuts. See **23, TOOL KIT**.
3. Remove the standard lug nut.

⚠WARNING

Make sure that the spare wheel is supported when removing the final lug nut. Failure to do so may result in serious injury or death.



E253061

A spare wheel alignment tool is supplied in the vehicle's tool kit. See **23, TOOL KIT**.

Install the spare wheel alignment tool as shown before storing the spare wheel on the vehicle:

1. Install the spare wheel alignment tool (1) to the spare wheel carrier.
2. Tighten the spare wheel alignment tool using the end of the lug wrench (2).

Reverse the procedure to store the changed wheel. Tighten the spare wheel lug nuts to 103 lb.ft. (140 Nm).

Vehicle Recovery Guide

WHEEL CHANGING

Make sure to read and fully understand the following warnings. Failure to comply with the safety instructions could result in an accident, leading to serious injury or death.

⚠ WARNING

Make sure the relevant safety warnings have been read and understood before changing a wheel. See the Owner's Handbook.

⚠ WARNING

Disconnect any trailer or caravan from the vehicle.

⚠ WARNING

The standard vehicle jacking points should be used to raise the vehicle. Do not raise the vehicle by jacking under the fixed side steps, deployable side steps, or side tubes.

NOTICE

Only jack the vehicle using the jacking points described, or damage to the vehicle could occur.

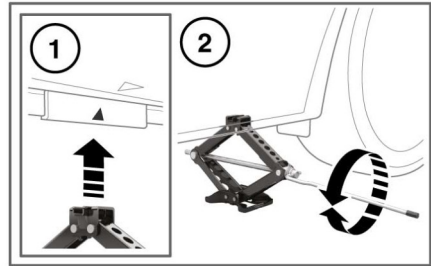
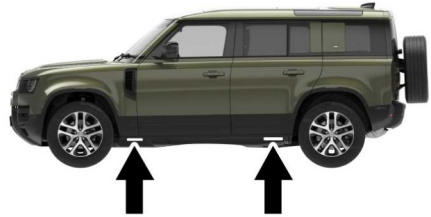
Note: To allow easier access to the vehicle jacking points, it is recommended that the deployable side steps are in the stored position. See the Owner's Handbook.

Note: Vehicles fitted with deployable side steps: Select off-road height before jacking the vehicle. See the Owner's Handbook.

Before raising the vehicle:

1. Remove the required tools from the vehicle. See **23, TOOL KIT**.
2. Remove the spare wheel. See **24, REMOVING THE SPARE WHEEL**.

3. Correctly position the wheel chocks. See the Owner's Handbook.



E246861

To change a wheel:

1. Use the lug wrench to loosen the lug nuts of the wheel to be replaced. Turn half a turn counter-clockwise.
2. Locate the jack under the relevant jacking point (1).

NOTICE

Do not allow the jack to contact the sill at any other point, as damage may result.

3. Unfold the handle from the stored position on the jack. Fit the lug wrench to the end of the cranking handle.
4. Rotate the handle clockwise (2) to raise the jack, until the jack pin locates into the jacking point.
5. Raise the vehicle until the wheel is clear of the ground.

⚠️ WARNING

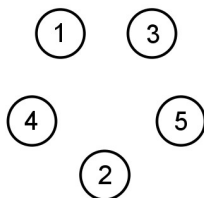
Avoid rapid, jerky actions. Rapid, jerky actions may cause the vehicle and jack to become unstable, which may result in an accident, leading to serious injury or death.

6. Remove the lug nuts. Place the lug nuts together where they cannot roll away.
7. Remove the wheel and place it to one side.

NOTICE

Do not lay the wheel on its face, as this may damage the finish.

8. Fit the spare wheel to the hub.
9. Refit the lug nuts. Lightly tighten the lug nuts. Make sure the wheel is making contact with the hub evenly.
10. Make sure the area under the vehicle is clear of obstructions. Lower the vehicle slowly and smoothly.
11. With all of the wheels on the ground and the jack removed, fully tighten the lug nuts. Tighten the lug nuts, in the sequence shown in the illustration, to the correct torque of 103 lb.ft (140 Nm).



E132675

Note: *If it is not possible to torque the lug nuts when a wheel is replaced, set to the correct torque as soon as possible.*

If a spare wheel is to be fitted, use a suitable blunt tool to knock the center cap out of the removed wheel. Use hand pressure only to press the center cap into the newly fitted spare.

Check and adjust the tire pressure as soon as possible.

FRONT TOWING EYE

⚠️ WARNING

The front towing eye is designed for on-road recovery only. If the towing eye is used for any other purpose, it may result in vehicle damage and can cause serious injury or death.

⚠️ WARNING

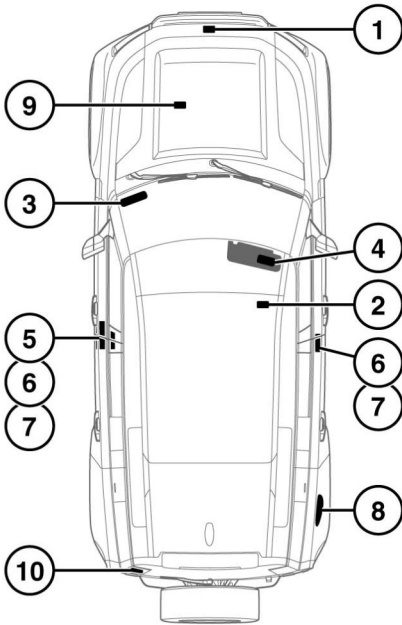
Use extreme caution when moving or towing the vehicle. Death or serious injury may occur.

NOTICE

Remove the front towing eye cover before driving off-road, to prevent damage or loss. The cover must be replaced before driving on the road.

The front towing eye is located behind a removable cover in the front bumper.

Vehicle Recovery Guide



E248496

1. Hood locking platform: Air Conditioning (A/C) label.
2. Top of the battery: Battery warning symbols.
3. The Vehicle Identification Number (VIN) is stamped onto a plate, visible through the lowest part of the right side of the windshield. The number is also stamped into the right-side suspension tower.

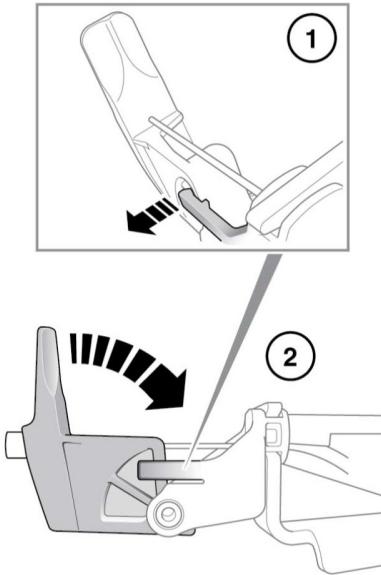
Note: The VIN number may be requested by the retailer/authorized repairer.

Note: The vehicle's built date is shown on the VIN plate. The built-date is the calendar month and year in which the body and powertrain assemblies were conjoined and the vehicle was driven from the production line. The vehicle's built-date is also shown on the tire pressure label, attached to the right-side B pillar.

4. Passenger side sun visor: Air bag label, vehicle handling label.
5. B pillar: VIN number.
6. B pillar or inside base of the front door: Tire pressure labels.
7. B pillar: Air bag warning label.
8. Inside the fuel filler flap: Fuel label.
9. Engine number: Inlet manifold.
10. Rear taildoor warning information.

It is important to be familiar with these subjects, to make sure that the vehicle and its features are used safely.

Note: When the securing latch engages an audible click may be heard. Engagement may also be felt via the handle.



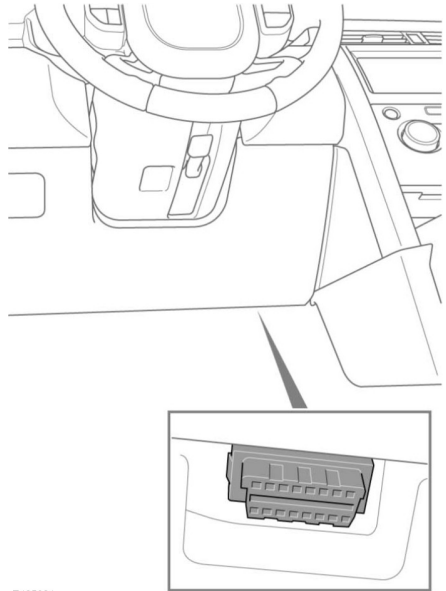
E167135

To return the automatic transmission to **P**:

1. Lightly release the securing latch.
2. The lever automatically returns to its normal, horizontal position.

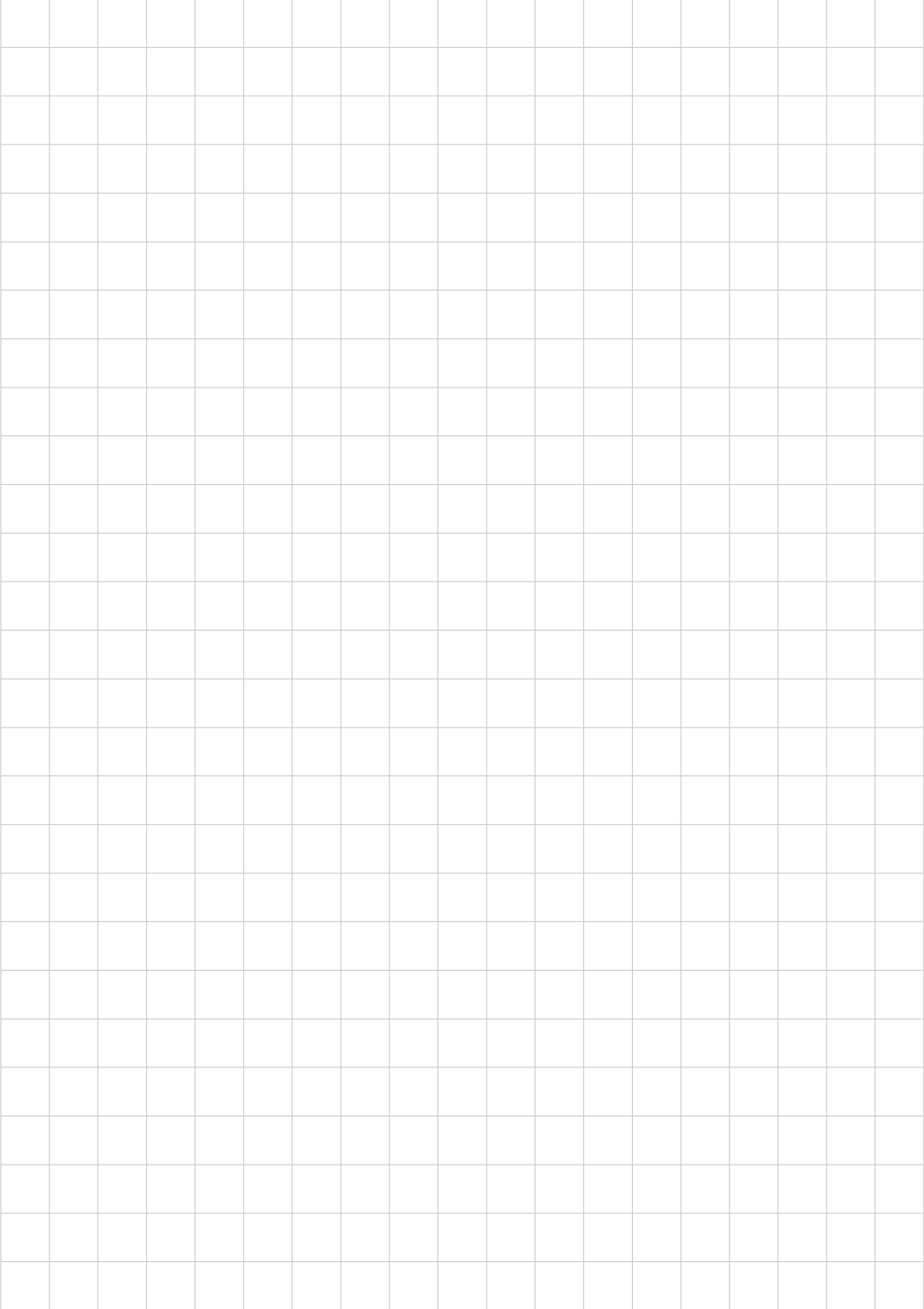
Refit the engine cover.

ON-BOARD DIAGNOSTICS (OBD) CONNECTOR LOCATION



E195301

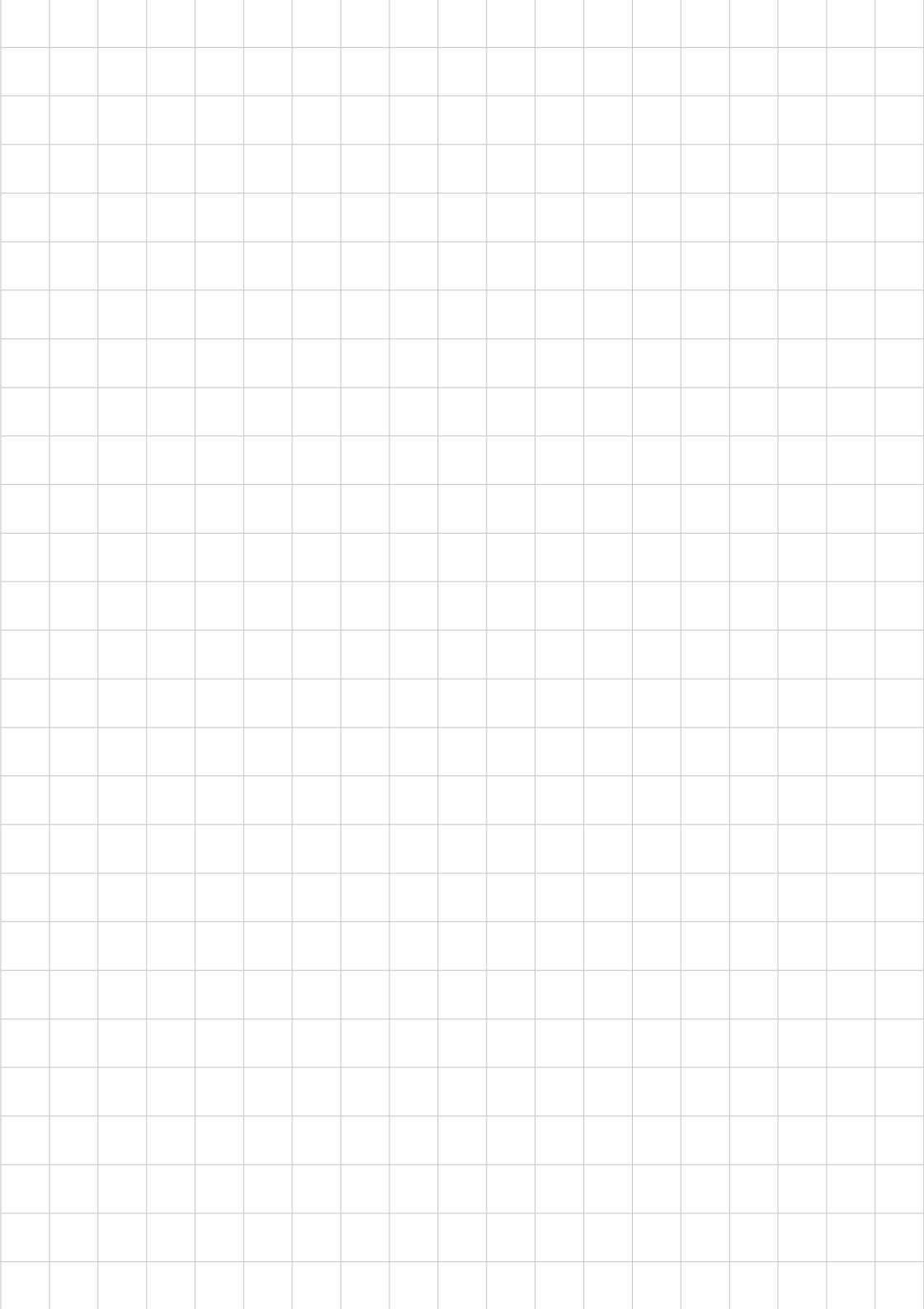
The On-Board Diagnostics (OBD) connector is located under the dashboard, on the driver's side.

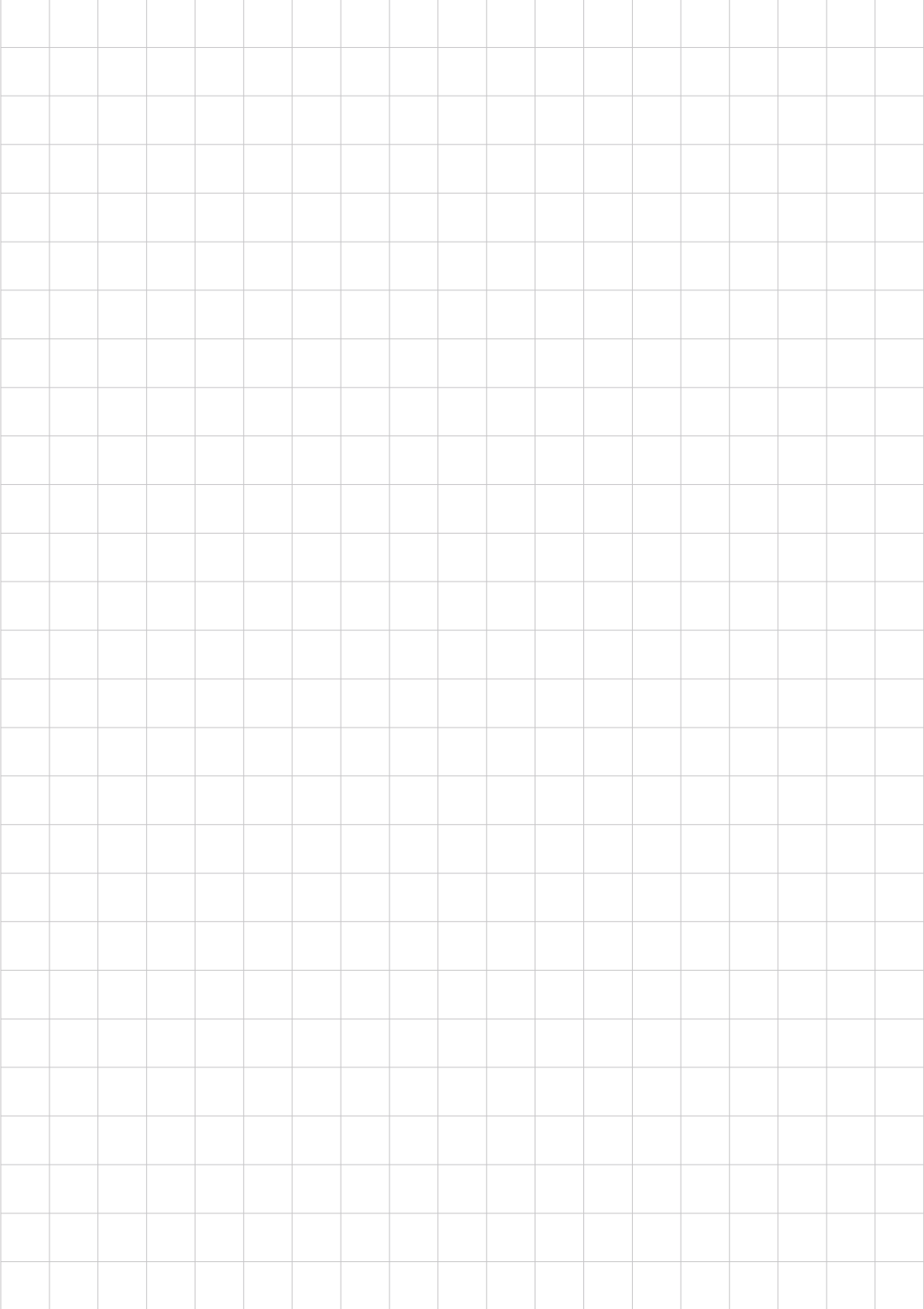


	2020 DEFENDER 90 (MHEV GAS) 3.0 TC 16 395HP	2020 DEFENDER 110 (GAS) 2.0 TC 14 296HP	2020 DEFENDER 110 (MHEV GAS) 3.0 TC 16 395HP
INTERIOR DIMENSIONS			
Available Seating	5/6 Seating	5/6 Seating or 5+2 Seating	5/6 Seating or 5+2 Seating
Headroom (in)	Row 1: 40.6 Row 2: 42.6 Row 3: 36.6	Row 1: 40.6 Row 2: 42.6 Row 3: 40.7 (5+2 Seating)	Row 1: 40.6 Row 2: 42.6 Row 3: 40.7 (5+2 Seating)
Shoulder Room (in)	Row 1: 60.8 Row 2: 36.4	Row 1: 60.8 Row 2: 36.4	Row 1: 60.8 Row 2: 36.4
Legroom (in)	Row 1: 39.1 Row 2: 36.6	Row 1: 39.1 (5/6 Seating) / 39.1 (5+2 Seating) Row 2: 39.1 (5/6 Seating) / 38.4 (5+2 Seating) Row 3: 20.5 (5+2 Seating)	Row 1: 39.1 (5/6 Seating) / 39.1 (5+2 Seating) Row 2: 39.1 (5/6 Seating) / 38.4 (5+2 Seating) Row 3: 20.5 (5+2 Seating)
Luggage Capacity (cu ft)	Behind Row 1: 58.3 Behind Row 2: 15.6	Behind Row 1: 78.8 (5/6 Seating) / 69.0 (5+2 Seating) Behind Row 2: 34.0 (5/6 Seating) / 34.6 (5+2 Seating) Behind Row 3: 10.7 (5+2 Seating)	Behind Row 1: 78.8 (5/6 Seating) / 69.0 (5+2 Seating) Behind Row 2: 34.0 (5/6 Seating) / 34.6 (5+2 Seating) Behind Row 3: 10.7 (5+2 Seating)
Loadspace Length (in)	Behind Row 1: 51.7 Behind Row 2: 18.1	Behind Row 1: 69.4 (5/6 Seating) / 70.4 (5+2 Seating) Behind Row 2: 36.2 (5/6 Seating) / 35.4 (5+2 Seating) Behind Row 3: 11.4 (5+2 Seating)	Behind Row 1: 69.4 (5/6 Seating) / 70.4 (5+2 Seating) Behind Row 2: 36.2 (5/6 Seating) / 35.4 (5+2 Seating) Behind Row 3: 11.4 (5+2 Seating)
OFF - ROAD DIMENSIONS			
Approach Angle (deg)	30.1	30.1	30.1
Approach Angle (in off-road height) (deg)	38.0	38.0	38.0
Departure Angle (deg)	37.6	37.7	37.7
Departure Angle (in off-road height) (deg)	40.0	40.0	40.0
Ramp Breakover Angle (deg)	24.2	22.0	22.0
Ramp Breakover Angle (in off-road height) (deg)	31.0	28.0	28.0
Wading Depth (in off-road height) (in)	35.4	35.4	35.4
Ground Clearance (in)	8.5	8.6	8.6
Ground Clearance (in off-road height) (in)	11.5	11.5	11.5
Maximum Ascent / Descent Gradient (deg)	45.0	45.0	45.0
Maximum Side Slope Traverse Gradient (deg)	45.0	45.0	45.0

	2020 DEFENDER 90 (MHEV GAS) 3.0 TC I6 395HP	2020 DEFENDER 110 (GAS) 2.0 TC I4 296HP	2020 DEFENDER 110 (MHEV GAS) 3.0 TC I6 395HP
Available Trims	First Edition	Defender S	SE HSE X First Edition
ENGINE			
Engine Layout	Inline 6	Inline 4	Inline 6
Induction	Turbocharged with Electric Boost	Turbocharged	Turbocharged with Electric Boost
Displacement (cc)	2,996.0	1,997.3	2,996.0
Bore / Stroke (mm)	83.0 x 92.3	83.0 x 92.3	83.0 x 92.3
Compression Ratio (:1)	10.5	9.5	10.5
Max Power (hp)	395 @ 5,500rpm	296 @ 5,500rpm	395 @ 5,500rpm
Max Torque (lb-ft)	406 @ 2,000-5,000rpm	295 @ 1,500-4,000rpm	406 @ 2,000-5,000rpm
ELECTRIC DRIVE / BATTERY			
Electric Motor Type	Permanent Magnet	-	Permanent Magnet
Battery Type	Lithium Ion	-	Lithium Ion
TRANSMISSION / DRIVETRAIN			
Transmission Type	ZF® 8-Speed Automatic (8HP76)	ZF® 8-Speed Automatic (8HP45)	ZF® 8-Speed Automatic (8HP76)
1st (:1)	5.500 / 16.115	4.714 / 13.812	5.500 / 16.115
2nd (:1)	3.520 / 10.314	3.143 / 9.209	3.520 / 10.314
3rd (:1)	2.200 / 6.446	2.106 / 6.171	2.200 / 6.446
4th (:1)	1.720 / 5.040	1.667 / 4.884	1.720 / 5.040
5th (:1)	1.317 / 3.859	1.285 / 3.765	1.317 / 3.859
6th (:1)	1.000 / 2.930	1.000 / 2.930	1.000 / 2.930
7th (:1)	0.823 / 2.411	0.839 / 2.458	0.823 / 2.411
8th (:1)	0.640 / 1.875	0.667 / 1.954	0.640 / 1.875
Reverse (:1)	-3.993 / -11.699	-3.295 / 9.654	-3.993 / -11.699
Final Drive Ratio (:1)	3.55	4.10	3.55
Transfer Box Ratio (:1)	2.93	2.93	2.93
Four Wheel Drive System ²	Permanent Four Wheel Drive with Terrain Response [®]	Permanent Four Wheel Drive with Terrain Response [®] , Optional Terrain Response [®] 2	Permanent Four Wheel Drive with Terrain Response [®] , Optional Terrain Response [®] 2* and Optional Locking Center and Active Locking Rear Differential ^{1**}

*Standard on First Edition and X models





Front towing eye and rear exposed towing eyes are designed for both on-road and off-road recovery.

Max 14330 lbs or 6500 kg

(The screw-in type rear recovery eyes are designed for on-road recovery only).

CALCULATE TOTAL RESISTANCE

1. **Figure out the static Weight of the load.** Includes all equipment, luggage, fuel, and anything the vehicle may be carrying. Adjust your static weight to compensate for weight transfer if there is more than one surface, for example the casualty is mired in mud and then will be on grass. The weight transfer number is added to the static weight, and it's calculated using the same gradient resistance numbers as we showed above (e.g. multiply static weight by 0.25 for a gradient of 15°). This adjusted number is the one you should use to calculate the surface and gradient resistance in step 2 and 3 below.

2. Calculate the surface resistance (ARR)

The surface resistance is **either** rolling **or** damage **or** mire resistance, whichever is the largest number.

TOTAL WEIGHT x 0.05 = "ROLLING HARD"

TOTAL WEIGHT x 0.15 = "ROLLING SOFT"

TOTAL WEIGHT x 0.666 = DAMAGE

TOTAL WEIGHT x 0.75 = "TIRE MIRE"

TOTAL WEIGHT x 1.0 = "WHEEL MIRE"

TOTAL WEIGHT x 1.5 = "BODY MIRE"

3. Add or subtract the Added Gradient Resistance (AGR)

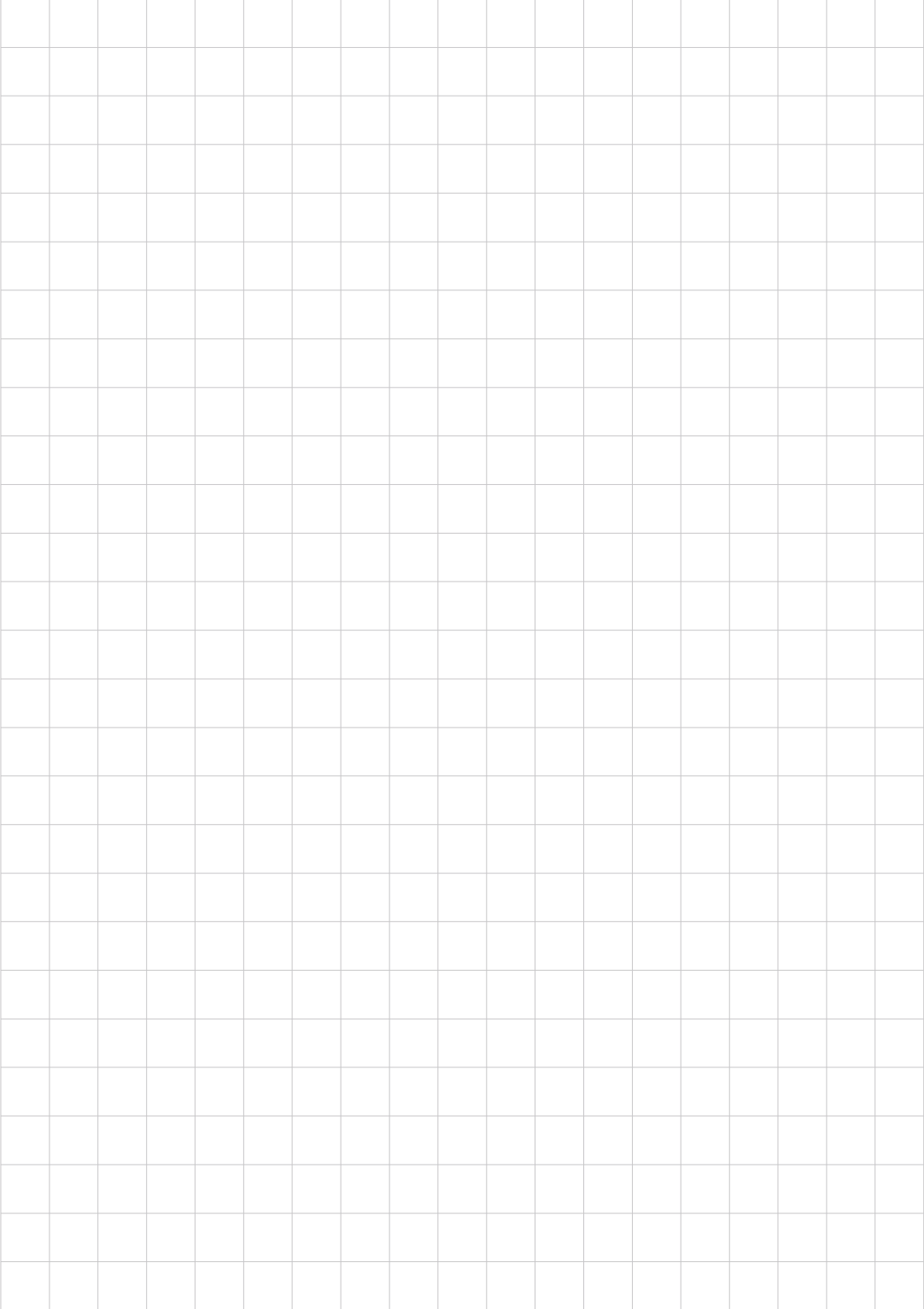
Add it if moving casualty uphill. Subtract if moving casualty downhill.

TOTAL WEIGHT x 0.25 = 15° Gradient

TOTAL WEIGHT x 0.50 = 30° Gradient

TOTAL WEIGHT x 0.75 = 45° Gradient

Minimum Capacity Required = W + ARR + AGR





DEFENDER

