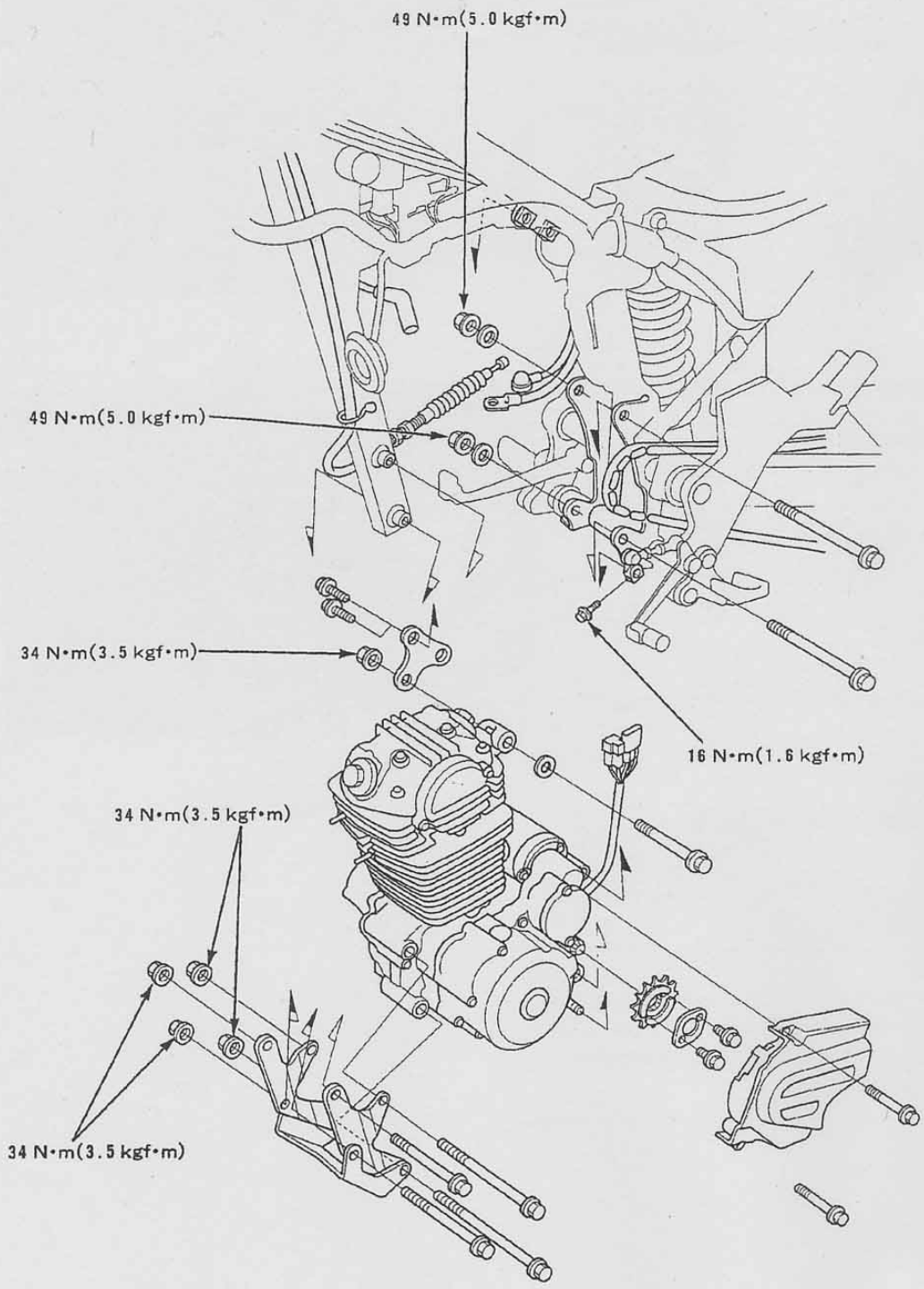


• Engine Removal / Installation



|                             |       |                                  |       |
|-----------------------------|-------|----------------------------------|-------|
| Service Information.....    | 6 – 1 | Engine Installation.....         | 6 – 4 |
| Drive Sprocket removal..... | 6 – 2 | Drive Sprocket installation..... | 6 – 6 |
| Engine removal.....         | 6 – 3 |                                  |       |

## ◆ Service Information

### • General

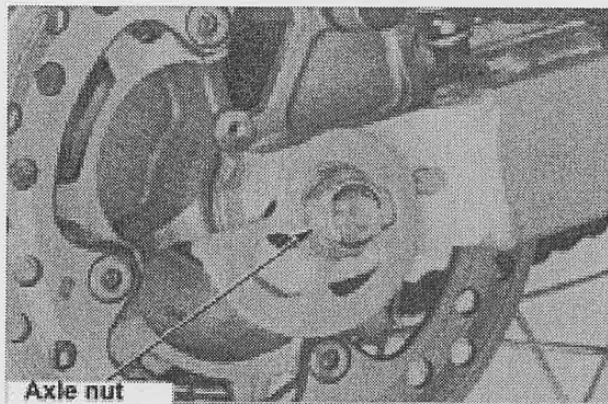
- When removing/installing the engine, support the body with a jack and do not damage the frame, the engine, cables and harness.
- Apply tapes on the frame to protect the frame from damage while jacking up.
- The following service works do not require engine removal:
  - Oil pump (sec. 4)
  - Carburetor (sec. 5)
  - Clutch, gear shift linkage (sec. 9)
  - Alternator (sec. 14)
- The following service works require engine removal:
  - Cam shaft and cylinder head (sec. 7)
  - Cylinder and piston (sec. 8)
  - Crankshaft (sec. 10)
  - Transmission (sec. 10)
  - Shift fork and shift drum (sec. 10)
- After installing the engine, inspect/adjust the following items:
  - Throttle cable (3-18)
  - Clutch cable (3-9)
  - Drive chain (3-10)

### • Torque settings:

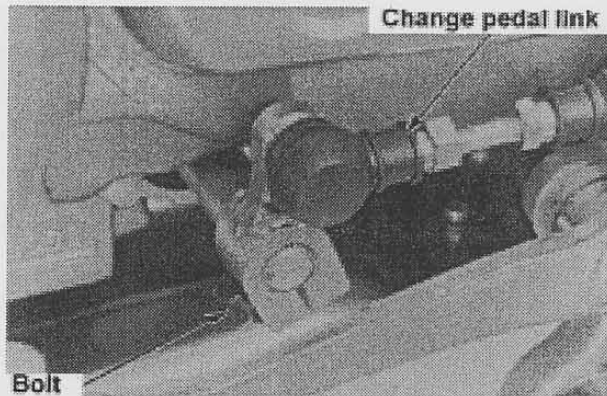
|  |                               |
|--|-------------------------------|
| Cylinder head hanger nut (engine side) | 34N.m (3.5kgf-m)              |
| Rear upper engine mount nut            | 49N.m (5.0kgf-m)              |
| Rear lower engine mount nut            | 49N.m (5.0kgf-m)              |
| Front engine hanger nut (engine side)  | 34N.m (3.5kgf-m)              |
| Front engine hanger nut (frame side)   | 34N.m (3.5kgf-m)              |
| Change pedal link tightening bolt      | 16N.m (1.6kgf-m) special bolt |

## ◆ Drive Sprocket removal

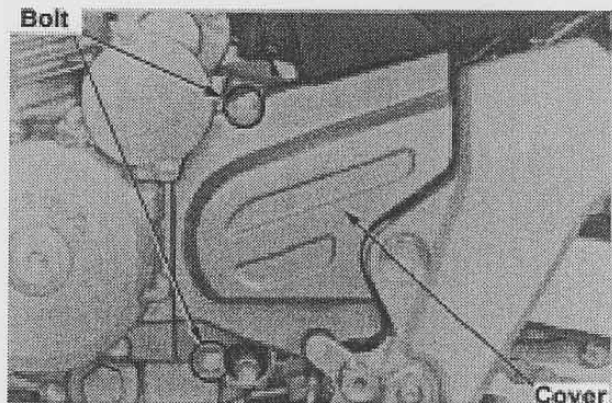
Loosen the rear axle nut. Turn adjust plates on both sides to maximise the drive chain slack.



Remove the bolt to disconnect change pedal link.

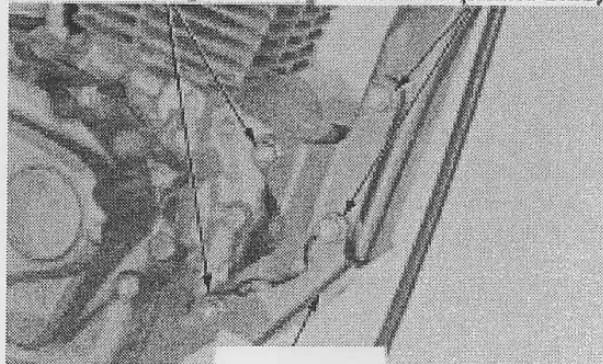


Remove the bolt to remove drive sprocket cover.



**Bolts/nuts (engine side) | Bolts/nuts (frame side)**

Remove fixing plate bolts and fixing plate. Detach the drive sprocket from counter shaft to remove the drive sprocket.



## ◆ Engine removal

Disconnect a battery negative lead (14-5).

Remove the following items:

- drive sprocket (6-2)
- carburetor (5-3)
- spark plug cap (3-14)
- skid plate (2-5)
- exhaust pipe and muffler (2-6)

Disconnect an alternator 3P (black) coupler and a pulse generator/neutral switch 3P (white) coupler.

Remove a clutch cable holder bolt to disconnect the clutch cable from a clutch arm.

Disconnect a crankcase breather tube. Remove a starter motor terminal nut to disconnect a starter motor cable (16-5).

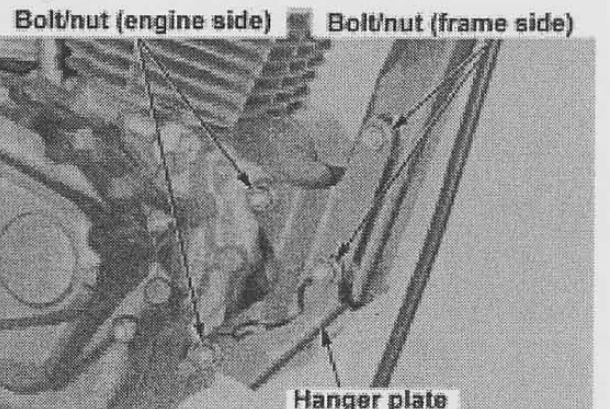
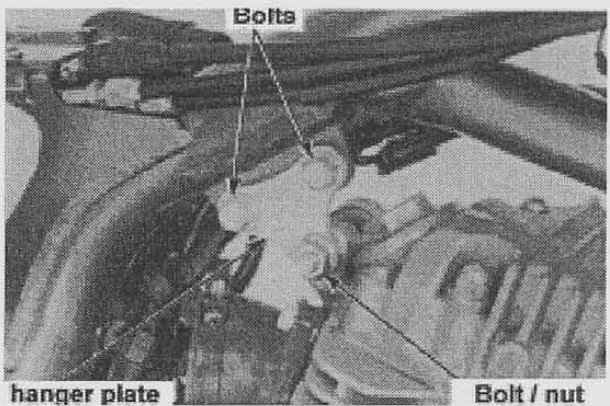
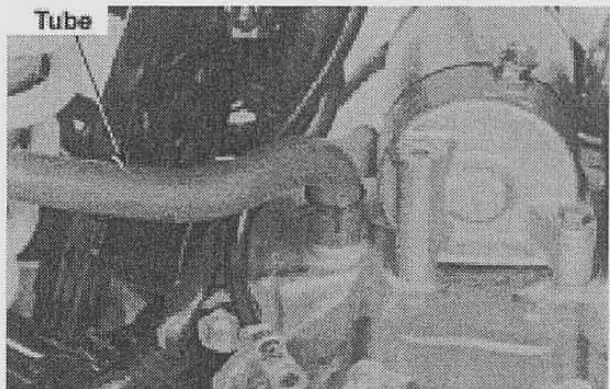
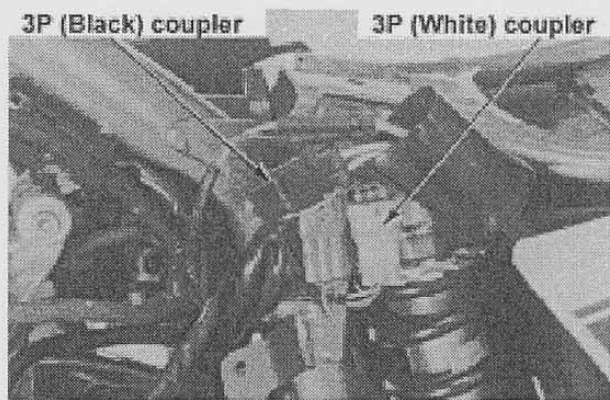
Sling the frame and firmly support it. Support the bottom of the engine with a jack.

**Note:**

**Adjust the jack to relieve engine mount bolts and hanger bolts from stress.**

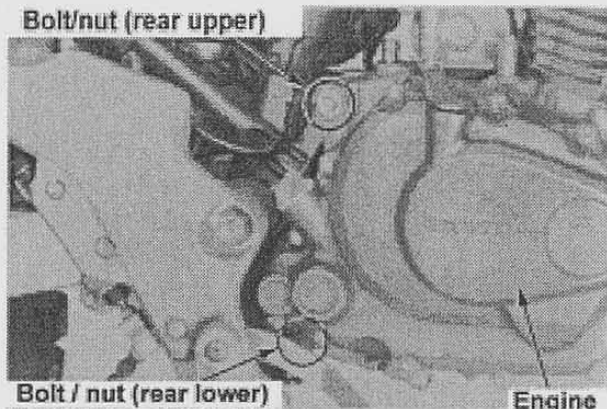
Remove the cylinder head hanger bolt/nut. Remove cylinder head hanger plate bolts and remove the hanger plate.

Remove front engine hanger plate bolts/nuts to remove the hanger plate.



Remove rear upper engine mount bolt/nut.

Remove rear lower engine mount bolt/nut and pull out the engine to the right.



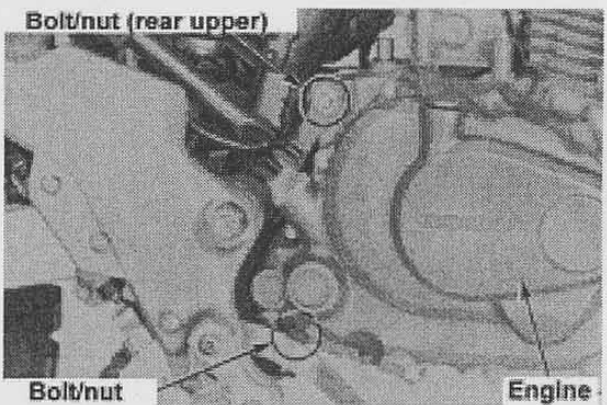
#### ◆ Engine installation



General  
Caution

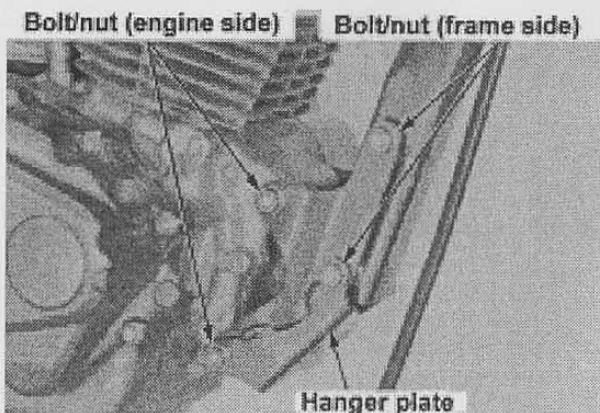
Adjust the jack so as to align all engine mount parts. Do not damage the engine, the frame, the drive chain, cables and harness.

Set the engine to the frame.



Temporarily set and tighten the rear lower engine mount bolt/nut.

Temporarily set and tighten the rear upper engine mount bolt/nut.



Install the front engine hanger plate and temporarily tighten bolts/nuts.



Install the cylinder head hanger plate and temporarily tighten bolts/nuts.

Set the cylinder head hanger bolt and temporarily tighten the nut.

### • Engine mount bolt tightening sequence

Tighten the bolts/nuts to specified torque settings in the following order:

1. Rear upper engine mount bolt/nut  
**Torque: 49N.m (5.0kgf-m)**
2. Rear lower engine mount bolt/nut  
**Torque: 49N.m (5.0kgf-m)**
3. Front engine hanger bolt/nut  
**Torque: 34N.m (3.5kgf-m)**
4. Cylinder head hanger bolt/nut (engine side)  
**Torque: 34N.m (3.5kgf-m)**

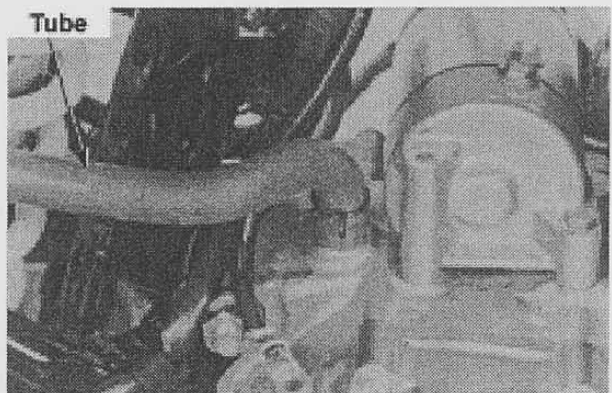
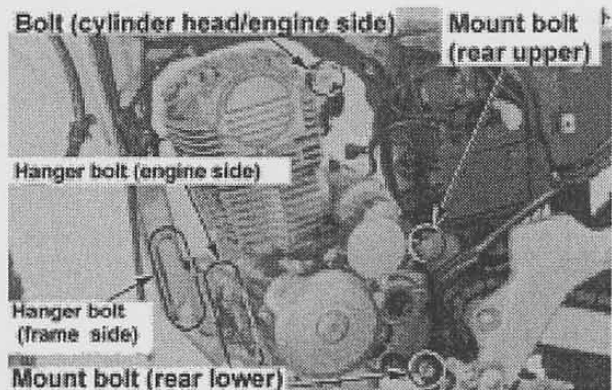
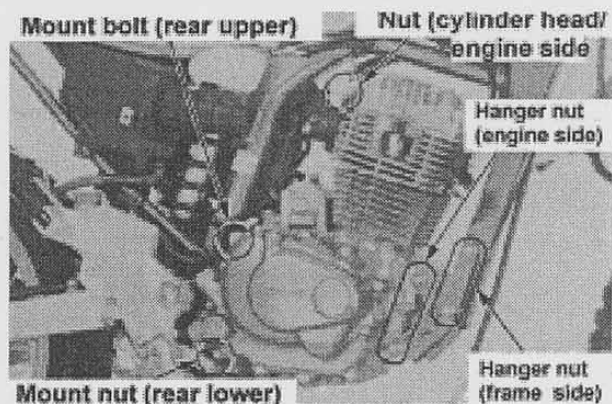
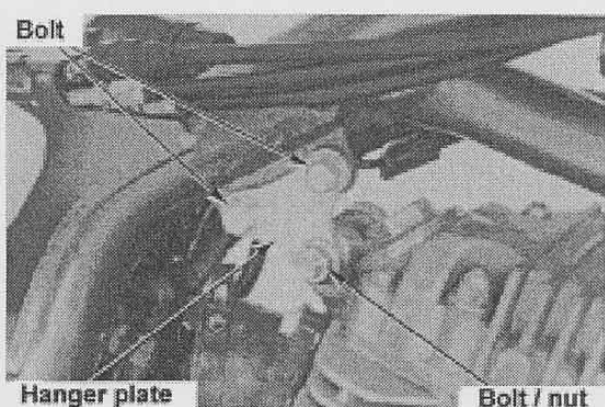
Connect the crankcase breather tube.

Connect the starter motor cable and install a starter motor terminal nut (16-12). Connect a clutch cable to the clutch arm and install a clutch cable holder and bolt. Connect an alternator 3P (black) coupler and a pulse generator / neutral switch 3P (white) coupler.

Install the following items:

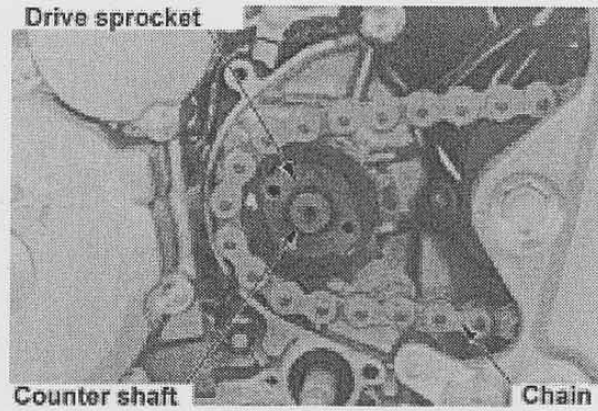
- drive sprocket (6-6)
- carburetor (5-12)
- spark plug cap (3-14)
- skid plate (2-5)
- exhaust pipe and muffler (2-8)

Connect the battery negative lead.

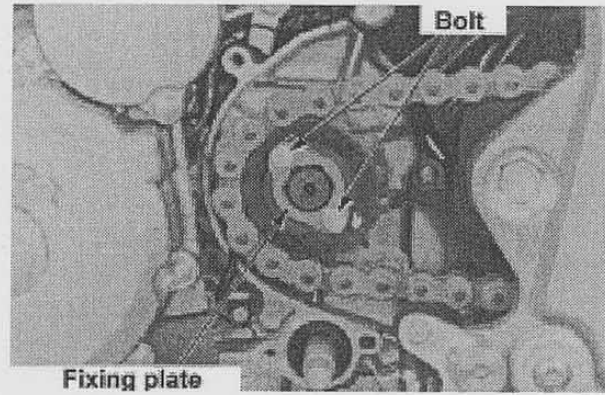


- **Drive Sprocket installation**

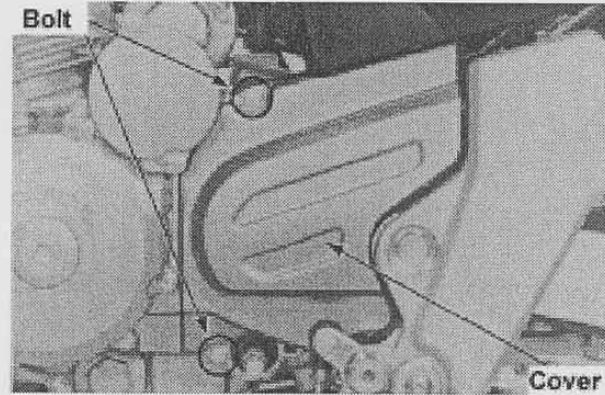
Apply drive chain to the drive sprocket and install the sprocket to the counter shaft.



Install the fixing plate and tighten the bolts.

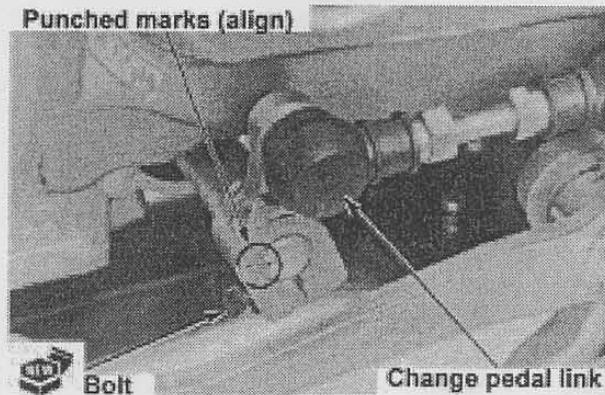


Install the drive sprocket cover and tighten the bolts.



After installing the cover, adjust the drive chain slack (3-10).

Set the change pedal link to the spindle by aligning the punched marks.



Set and tighten a new bolt.  
**Torque: 16N.m (1.6kgf-m)**