

Key Differences:

Aspect	ROUND	TRUNC
Action	Rounds to the nearest specified unit	Truncates to the start of the unit
Direction	Can round up or down	Always truncates downward
Example (Month)	<code>ROUND('27-JAN-2025', 'MM') → 01-FEB-2025</code>	<code>TRUNC('27-JAN-2025', 'MM') → 01-JAN-2025</code>
Example (Year)	<code>ROUND('27-JUN-2025', 'YYYY') → 01-JAN-2026</code>	<code>TRUNC('27-JUN-2025', 'YYYY') → 01-JAN-2025</code>

In summary:

- Use `ROUND` when you want to **round up or down** to the nearest unit.
- Use `TRUNC` when you want to **always truncate** to the beginning of the unit.

```

1 SELECT SYSDATE FROM DUAL;
2 SELECT SYSDATE AS system_date FROM DUAL;
3 SELECT TO_CHAR(SYSDATE, 'Day') FROM DUAL;
4 SELECT TO_CHAR(SYSDATE, 'DAY') AS current_day FROM DUAL;
5 SELECT TO_CHAR(SYSDATE, 'Month YYYY') FROM DUAL;
6 SELECT TO_CHAR(SYSDATE, 'MONTH YYYY') AS current_month_year FROM DUAL;
7 SELECT TO_CHAR(SYSDATE, 'FMDay, FMMonth DD, YYYY') FROM DUAL;
8 SELECT TO_CHAR(SYSDATE, 'FMDay, FMDDth Month YYYY') AS spelled_out_date FROM DUAL;
9 SELECT TO_CHAR(SYSDATE, 'AMPM') FROM DUAL;
10 SELECT TO_CHAR(SYSDATE, 'AM') AS am_or_pm FROM DUAL;
11 SELECT NEXT_DAY(SYSDATE, 'FRIDAY') FROM DUAL;
12 SELECT NEXT_DAY(SYSDATE, 'FRIDAY') AS next_friday FROM DUAL;
13 SELECT ROUND(SYSDATE, 'MM') FROM DUAL;
14 SELECT ROUND(SYSDATE, 'MONTH') AS rounded_month_date FROM DUAL;
15 SELECT TRUNC(SYSDATE, 'MM') FROM DUAL;
16 SELECT TRUNC(SYSDATE, 'MONTH') AS truncated_month_date FROM DUAL;
17 SELECT ROUND(SYSDATE, 'YYYY') FROM DUAL;
18 SELECT ROUND(SYSDATE, 'YEAR') AS rounded_year_date FROM DUAL;
19 SELECT TRUNC(SYSDATE, 'YYYY') FROM DUAL;
20 SELECT TRUNC(SYSDATE, 'YEAR') AS truncated_year_date FROM DUAL;
21 SELECT TO_CHAR(SYSDATE + 3, 'Day') FROM DUAL;
22 SELECT TO_CHAR(SYSDATE + 3, 'DAY') AS day_after_three_days FROM DUAL;

```

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23
24 CREATE TABLE EMP (
25     Empno NUMBER,
26     Name VARCHAR2(20),
27     Date_of_Joining DATE
28 );
29 INSERT INTO EMP (Empno, Name, Date_of_Joining) VALUES (101, 'John', TO_DATE('2023-12-25', 'YYYY-MM-DD')); -- Monday
30 INSERT INTO EMP (Empno, Name, Date_of_Joining) VALUES (102, 'Alice', TO_DATE('2023-01-15', 'YYYY-MM-DD')); -- Sunday
31 INSERT INTO EMP (Empno, Name, Date_of_Joining) VALUES (103, 'Bob', TO_DATE('2025-01-10', 'YYYY-MM-DD')); -- Friday
32 INSERT INTO EMP (Empno, Name, Date_of_Joining) VALUES (104, 'Charlie', TO_DATE('2025-01-25', 'YYYY-MM-DD')); -- Saturday
33 INSERT INTO EMP (Empno, Name, Date_of_Joining) VALUES (105, 'Diana', TO_DATE('2025-01-22', 'YYYY-MM-DD')); -- Wednesday
34 Select * from EMP;
35 SELECT Empno, Name, TO_CHAR(Date_of_Joining, 'Day') AS Day_of_Joining FROM EMP;
36 SELECT Empno, Name, Date_of_Joining FROM EMP WHERE TO_CHAR(Date_of_Joining, 'DY') = 'MONDAY';
37 SELECT Empno, Name, Date_of_Joining FROM EMP WHERE TRUNC(Date_of_Joining, 'MM') = TRUNC(SYSDATE, 'MM');
38

```

```

CREATE TABLE Train (
    TrainNo NUMBER(6) PRIMARY KEY,
    Date_of_Departure DATE,
    Time_of_Departure TIMESTAMP,
    Time_of_Arrival TIMESTAMP
);

INSERT INTO Train (TrainNo, Date_of_Departure, Time_of_Departure, Time_of_Arrival)
VALUES (101001, TO_DATE('2025-01-27', 'YYYY-MM-DD'), TO_TIMESTAMP('2025-01-27 10:30:00', 'YYYY-MM-DD HH24:MI:SS'), TO_TIMESTAMP('2025-01-27 15:00:00', 'YYYY-MM-DD HH24:MI:SS'));

INSERT INTO Train (TrainNo, Date_of_Departure, Time_of_Departure, Time_of_Arrival)
VALUES (101002, TO_DATE('2025-01-27', 'YYYY-MM-DD'), TO_TIMESTAMP('2025-01-27 14:00:00', 'YYYY-MM-DD HH24:MI:SS'), TO_TIMESTAMP('2025-01-27 19:30:00', 'YYYY-MM-DD HH24:MI:SS'));

INSERT INTO Train (TrainNo, Date_of_Departure, Time_of_Departure, Time_of_Arrival)
VALUES (101003, TO_DATE('2025-01-28', 'YYYY-MM-DD'), TO_TIMESTAMP('2025-01-28 08:15:00', 'YYYY-MM-DD HH24:MI:SS'), TO_TIMESTAMP('2025-01-28 12:45:00', 'YYYY-MM-DD HH24:MI:SS'));

INSERT INTO Train (TrainNo, Date_of_Departure, Time_of_Departure, Time_of_Arrival)
VALUES (101004, TO_DATE('2025-01-28', 'YYYY-MM-DD'), TO_TIMESTAMP('2025-01-28 17:45:00', 'YYYY-MM-DD HH24:MI:SS'), TO_TIMESTAMP('2025-01-28 21:15:00', 'YYYY-MM-DD HH24:MI:SS'));

INSERT INTO Train (TrainNo, Date_of_Departure, Time_of_Departure, Time_of_Arrival)
VALUES (101005, TO_DATE('2025-01-29', 'YYYY-MM-DD'), TO_TIMESTAMP('2025-01-29 23:50:00', 'YYYY-MM-DD HH24:MI:SS'), TO_TIMESTAMP('2025-01-30 04:30:00', 'YYYY-MM-DD HH24:MI:SS'));

```

```
60
61 v SELECT *
62 FROM Train;
63
64 v SELECT TrainNo,
65         TO_CHAR(Time_of_Departure, 'HH:MI AM') AS Departure_Time,
66         TO_CHAR(Time_of_Arrival, 'HH:MI AM') AS Arrival_Time
67 FROM Train;
68
69 v SELECT TrainNo, TO_CHAR(Time_of_Arrival, 'HH:MI AM') AS Arrival_Time
70 FROM Train
71 WHERE TO_CHAR(Time_of_Arrival, 'AMPM') = 'PM';
72
73 v SELECT TrainNo, Time_of_Departure
74 FROM Train
75 WHERE Time_of_Departure BETWEEN SYSTIMESTAMP AND SYSTIMESTAMP + INTERVAL '1' HOUR;
76
```