

Thinkful Data Science SQL Self-sufficiency Exam  
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-- 1

```
SELECT *  
FROM naep;
```

-- 2

```
SELECT *  
FROM naep  
LIMIT 50;
```

-- 3

```
SELECT  
    state,  
  
    SUM(avg_math_4_score) AS score_total,  
  
    AVG(avg_math_4_score) AS average,  
  
    STDDEV(avg_math_4_score) AS standard_deviation,  
  
    MIN(avg_math_4_score) AS minimum_score,  
  
    PERCENTILE_CONT(0.25) WITHIN GROUP (ORDER BY avg_math_4_score) AS  
percent_25_quantile,  
  
    PERCENTILE_CONT(0.5) WITHIN GROUP (ORDER BY avg_math_4_score) AS  
median_score,  
  
    PERCENTILE_CONT(0.75) WITHIN GROUP (ORDER BY avg_math_4_score) AS  
percent_75_quantile,  
  
    MAX(avg_math_4_score) AS max_score  
  
FROM  
    naep  
WHERE avg_math_4_score IS NOT NULL  
GROUP BY state  
ORDER BY state;
```

-- 4

```
SELECT
    state,

    SUM(avg_math_4_score) AS score_total,

    AVG(avg_math_4_score) AS average,

    STDDEV(avg_math_4_score) AS standard_deviaton,

    MIN(avg_math_4_score) AS minimum_score,

    PERCENTILE_CONT(0.25) WITHIN GROUP (ORDER BY avg_math_4_score) AS
percent_25_quantile,

    PERCENTILE_CONT(0.5) WITHIN GROUP (ORDER BY avg_math_4_score) AS
median_score,

    PERCENTILE_CONT(0.75) WITHIN GROUP (ORDER BY avg_math_4_score) AS
percent_75_quantile,

    MAX(avg_math_4_score) AS max_score

FROM
    naep
WHERE avg_math_4_score IS NOT NULL
GROUP BY state
HAVING MAX(avg_math_4_score) - MIN(avg_math_4_score) > 30
ORDER BY state;
```

--5

```
SELECT
    state as bottom_10_states
FROM
    naep
WHERE year = 2000
AND avg_math_4_score IS NOT NULL
ORDER BY avg_math_4_score
LIMIT 10;
```

--6

```
SELECT
    ROUND(AVG(avg_math_4_score),2) AS all_state_avg_2000
FROM
    naep
WHERE year = 2000;
```

--7

```
SELECT
    state
FROM
    naep
WHERE avg_math_4_score < (SELECT AVG(avg_math_4_score) FROM naep)
AND year = 2000
AND avg_math_4_score IS NOT NULL;
```

--8

```
SELECT
    state
FROM
    naep
WHERE avg_math_4_score IS NULL
AND year = 2000;
```

--9

```
SELECT
    naep.state,
    ROUND(naep.avg_math_4_score,2) AS avg_math_4_score,
    finance.total_expenditure
FROM
    naep
LEFT JOIN
    finance
ON
    naep.id = finance.id
WHERE naep.year = 2000
AND avg_math_4_score IS NOT NULL
ORDER BY finance.total_expenditure DESC;
```

