# Investigating Parallel Lines

① Investigate if the lines are parallel and justify your answer.

a

72°  a

108°  b

| Parallel / Not parallel? | Theorem used |
|---|---|
|  |  |

b

72°

m

110°  n

| Parallel / Not parallel? | Theorem used |
|---|---|
|  |  |

② a   Are $y = -7x + 9$ and $y = -7x - 8$ parallel to each other?   Yes   or   No

Reason -

b   Are $y = \frac{7}{2}x + 1$ and $y = \frac{2}{7}x - \frac{2}{7}$ parallel to each other?  Yes   or   No

Reason -

③ Draw a line passing through the points (1,1), (2,-2) and parallel to the given one on the graph. (-2, 4), and (0, -2) are 2 points on the given line. Check if the lines are parallel and circle your answer.

Investigate:

y

8

6

(-2,4)  4

2

-8  -6  -4  -2      2  4  6  8  x

(0,-2)

-2

-4

-6

-8
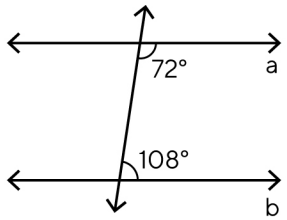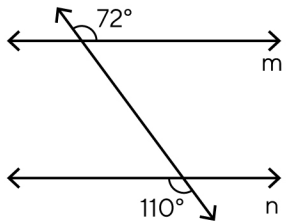
Answer:

(Yes)   or   No

Name: _____  Date: _____
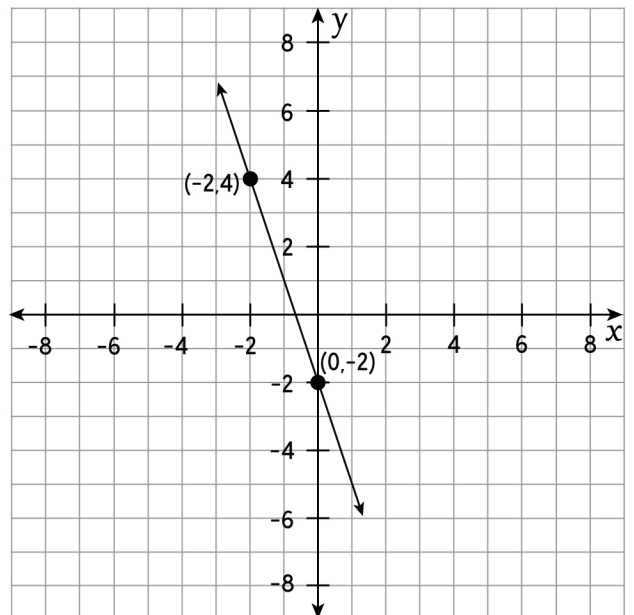
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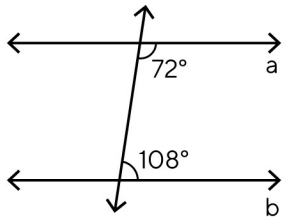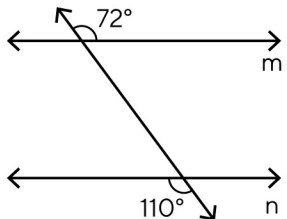
a



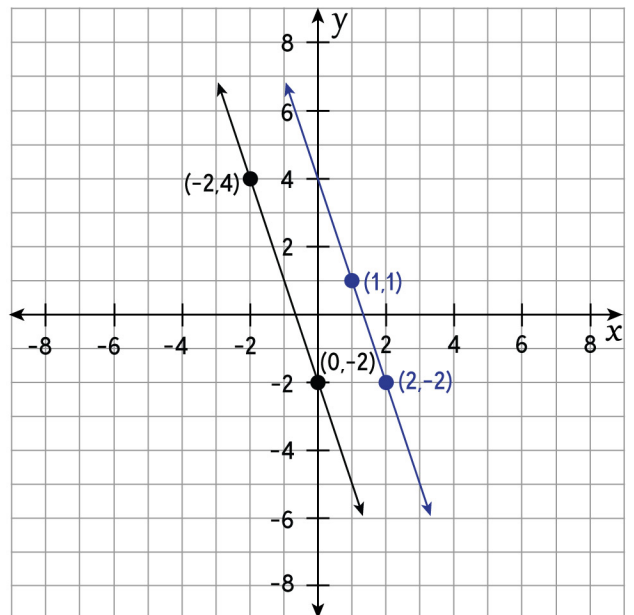| Parallel / Not parallel? | Theorem used |
|---|---|
| Parallel | Co-interior angles theorem |

b



| Parallel / Not parallel? | Theorem used |
|---|---|
| Parallel | Alternate exterior angles theorem |

② a  Are $y = -7x + 9$ and $y = -7x - 8$ parallel to each other?  (Yes)  or  No

Reason - Same slope

b  Are $y = \frac{7}{2}x + 1$ and $y = \frac{2}{7}x - \frac{2}{7}$ parallel to each other?  Yes  or  (No)

Reason - Different slopes

③ Draw a line passing through the points (1,1), (2,-2) and parallel to the given one on the graph. (-2, 4), and (0, -2) are 2 points on the given line. Check if the lines are parallel and circle your answer.

Investigate:

Answer:

(Yes)  or  No