NAME key

4 points 2 from two different lines Part II

1. Will the line that runs through the points (10, –3) and (5, 6) intersect with the line that runs through the points (10, 0) and (–8, 16). Show evidence to support your answer.

$\frac{-3-6}{10-5} = \frac{-9}{5}$

$6 = \frac{-9}{5} \cdot 5 + b$

$6 = -9 + b$

$b = 15$

L1: $y = \frac{-9}{5}x + 15$

L2: $y = \frac{-8}{9}x + \frac{80}{9}$

Yes → Different slope

$\frac{0-16}{10-8} = \frac{-16}{18} = \frac{-8}{9}$

$0 = \frac{-8}{9} \cdot 10 + b$

$0 = \frac{-80}{9} + b$

$b = \frac{80}{9}$

2. Will the line that runs through the points (4, –2) and (–10, 12) intersect with the line that runs through the points (2, 7) and (0, 9). Show evidence to support your answer.

$\frac{-2-12}{4--10} = \frac{-14}{14} = -1$

$-2 = -1 \cdot 4 + b$

$-2 = -4 + b$

$b = 2$

L1: $y = -x + 2$

L2: $y = -x + 9$

No → same slope

// lines Different y-inter.

$\frac{7-9}{2-0} = \frac{-2}{2} = -1$

$7 = -1 \cdot 2 + b$

$7 = -2 + b$

$9 = b$

3. Will the line that runs through the points (–12, –1) and (8, –7) intersect with the line that runs through the points (7, 8) and (–3, 11). Show evidence to support your answer.

$\frac{-1--7}{-12-8} = \frac{6}{-20} = \frac{3}{-10}$

$-7 = \frac{-3}{10} \cdot 8 + b$

$\frac{-70}{10} = \frac{-24}{10} + b \rightarrow b = \frac{-46}{10} = \frac{-23}{5}$

L1: $y = \frac{-3}{10}x + \frac{-23}{5}$

L2: $y = \frac{-3}{10}x + \frac{101}{10}$

No → Same slope

// lines different y-inter

$\frac{8-11}{2--3} = \frac{-3}{10}$

$8 = \frac{-3}{10} \cdot 7 + b$

$\frac{80}{10} = \frac{-21}{10} + b \rightarrow b = \frac{101}{10}$

4. Will the line that runs through the points (–20, 6) and (–18, 26) intersect with the line that runs through the points (–3, 19) and (–2, 12). Show evidence to support your answer.

$\frac{6-26}{-20--18} = \frac{-20}{-2} = 10$

$6 = 10 \cdot -20 + b$

$6 = -200 + b$

$b = 206$

L1: $y = 10x + 206$

L2: $y = -7x + -2$

Yes → Different slopes

$\frac{19-12}{-3--2} = \frac{7}{-1} = -7$

$12 = -7 \cdot -2 + b$

$12 = 14 + b$

$b = -2$

5. Will the line that runs through the points (5, –11) and (18, –40) intersect with the line that runs through the points (2, –7) and (–6, 19). Show evidence to support your answer.

$\frac{-11--40}{5-18} = \frac{29}{-13} =$

$-11 = \frac{-29}{13} \cdot 5 + b$

$\frac{-143}{13} = \frac{-145}{13} + b \rightarrow b = \frac{2}{13}$

L1: $y = \frac{-29}{13}x + \frac{2}{13}$

L2: $y = \frac{-13}{4}x + \frac{-1}{2}$

Yes → Different slopes

$\frac{-7-19}{2--6} = \frac{-26}{8} = \frac{-13}{4}$

$-7 = \frac{-13}{4} \cdot 2 + b$

$\frac{-14}{2} = \frac{-13}{2} + b \rightarrow b = \frac{-1}{2}$