Midpoints Worksheet

Find the midpoints of the following lines given the endpoints:

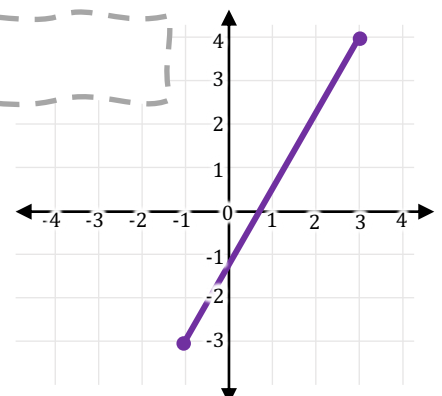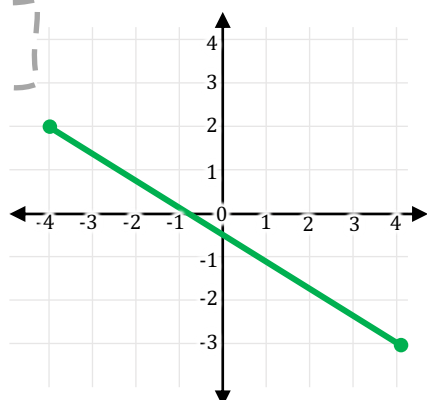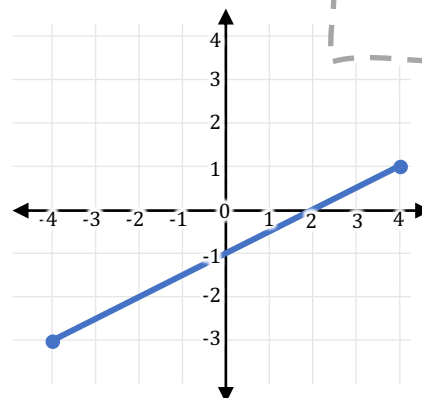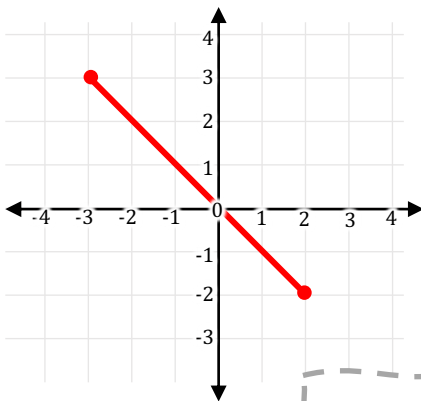$(3,6)$ and $(10,12)$

$(6,9)$ and $(-2,4)$

$(4.5,6)$ and $(6.5,20)$
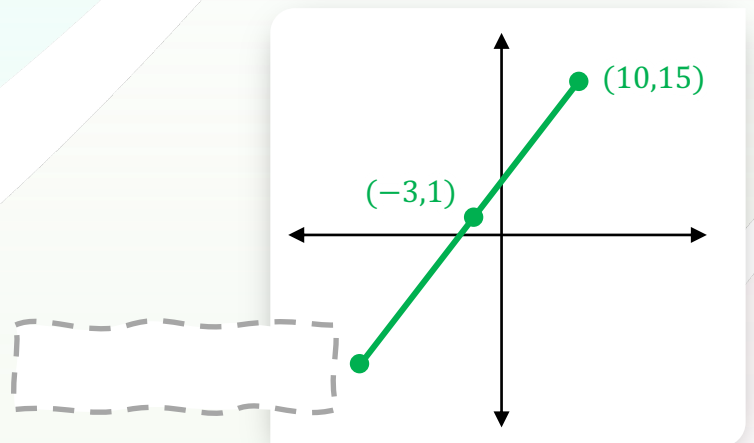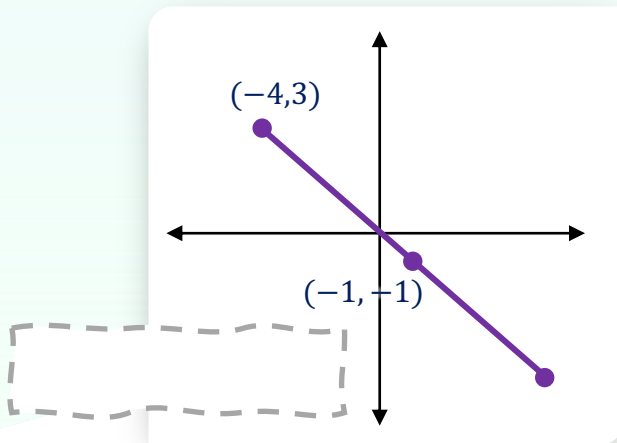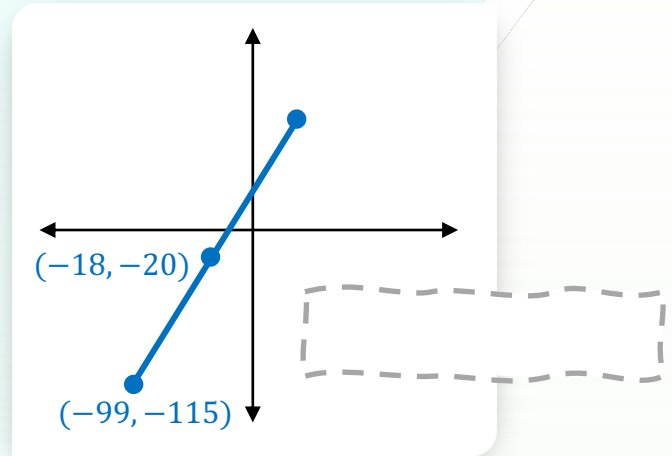
$(500,450)$ and $(-200,-50)$

$(20,45)$ and $(30,65)$

$(1.5,3)$ and $(-1.4,4)$

Find the co-ordinates of the midpoints of the lines on the graphs:

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Midpoints Worksheet

Find the missing endpoint given one endpoint and the midpoint

$(-20,25)$

$(-5,2.5)$

$(-18,-20)$

$(-99,-115)$

$(-4,3)$

$(-1,-1)$

$(10,15)$

$(-3,1)$
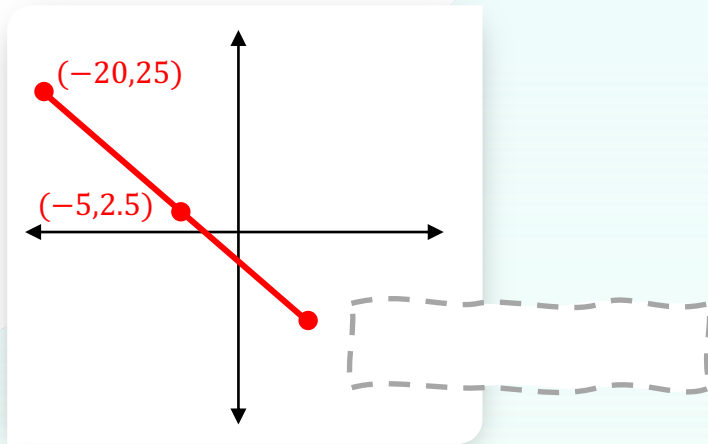
Solve the following word problems

A line has equation $y = 2x + 10$. Find the midpoint between the y-intercept and the x-intercept (where the line crosses the x axis).

A line passes through the y axis at (0,6) and has a gradient of -2. Calculate the midpoint between the x and y intercepts.

Line A has endpoints (1,-1) and (5,3). Line B has one endpoint at (1,3), and passes through the midpoint of Line A. Calculate the Gradient of line B.

Solve the following harder word problems

Line A has equation of $y = 3x + 4$. Line B has a gradient of -2, and one endpoint that lies on Line A, at point (4,p). Its other endpoint is at (q,0). Calculate the midpoint of Line B.

Find the perpendicular bisector of the following lines.

💡 A **perpendicular bisector** divides a line segment into two equal parts at a 90° angle. If a line has gradient m, its perpendicular bisector has a gradient of $-\frac{1}{m}$. The perpendicular bisector always passes through the midpoint of a line.

A line that has endpoints at $(2,9)$ and $(11,13)$

A line that has endpoints at $(-4,1)$ and $(-8,15)$
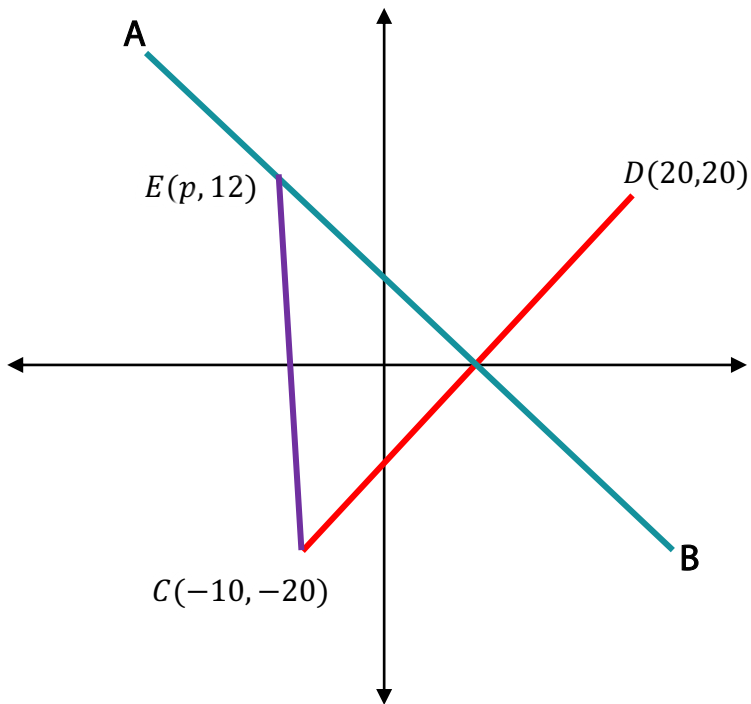
A line that has endpoints at $(-2,4)$ and $(-3,2)$

A line that has endpoints at $(6,-1)$ and $(3,19)$

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Solve the following word problem

AB is the perpendicular bisector of CD.

Point E lies on AB.

Calculate the midpoint of CE.