



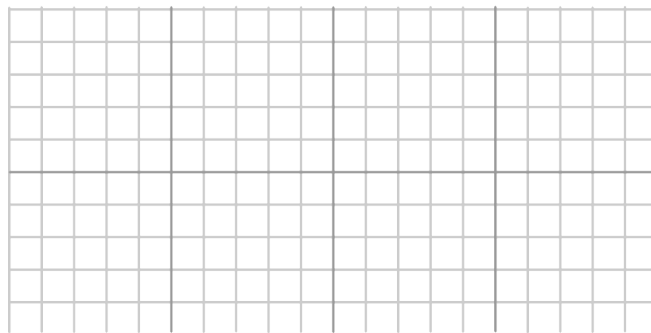
Problem of the Week

Problem B

Screen Size, Now and Then

Flat screen TVs usually have a screen ratio of $16 : 9$. This means that if the screen is 16 units wide, then it will be 9 units high. If the screen is 32 units wide, then since $32 = 16 \times 2$, it will be $9 \times 2 = 18$ units high, and so on.

- (a) Starting in the bottom-left corner of a grid that is 20 units wide and 10 units high, use a ruler to draw a flat screen TV screen that is 16 units wide and 9 units high.



- (b) Older TVs had a screen ratio of $4 : 3$. If an older TV was 9 units high, how many units wide would it be?
- (c) Draw the TV screen from part (b) on the same grid used in part (a), also starting in the bottom-left corner.
- (d) How many more square units of area does the flat screen TV screen have compared to the older TV screen, if they both have a height of 9 units?
- (e) A 4K flat screen TV has 3840×2160 pixels. If the screen is 122 cm wide by 69 cm high, how many pixels per cm^2 are there? Round to the nearest whole number.

