Geometry Part I 6.8 - Applying Coordinate Geometry

pg. 410 - 412 Even Solutions

8. *S: (0, a) T: (a, a) W: (a, 0) O: (0, 0)*

12. *S: (-a, 0) T: (-b, c) W: (b, c) Z: (a, 0)*

18. *P: (a, 0)*

22. a. *W:* $\left(\frac{a}{2},\frac{b}{2}\right)$ *Z:* $\left(\frac{c+e}{2},\frac{d}{2}\right)$

b. *W: (a,b) Z: (c+e, d)*

c. *W: (2a,2b) Z: (2c+2e, 2d)*

d. Part b. because the variables are in the simplest form.

26. Length of each side: AB = $\sqrt{(4b-b)^2+(3c-2c)^2}=\sqrt{9b^2+c^2}$;

BC = $\sqrt{(5b-4b)^2+(c-3c)^2}=\sqrt{b^2+4c^2}$; CD = $\sqrt{(2b-5b)^2+(0-c)^2}=\sqrt{9b^2+c^2}$;

AD = $\sqrt{(2b-b)^2+(-2c)^2}=\sqrt{b^2+4c^2}$; Therefore, opposite sides congruent (But all sides are not congruent.

Slope of each side: AB = $\frac{3c-2c}{4b-b}=\frac{c}{3b}$; BC = $\frac{c-3c}{5b-4b}=-\frac{2c}{b}$; CD = $\frac{0-c}{2b-5b}=\frac{c}{3b}$;

AD = $\frac{0-2c}{2b-b}=-\frac{2c}{b}$;

Therefore, opposite sides parallel (but not perpendicular). Therefore, this is a parallelogram.

36. To be a rhombus, the side lengths would have to be equal, but not perpendicular. Therefore, ABHF would be a rhombus. (Check distances and slopes to confirm.)

40. PQ = RS = 35 and QR = PS = 12, so Perimeter = 35 + 35 + 12 + 12 = 94 cm, so C.