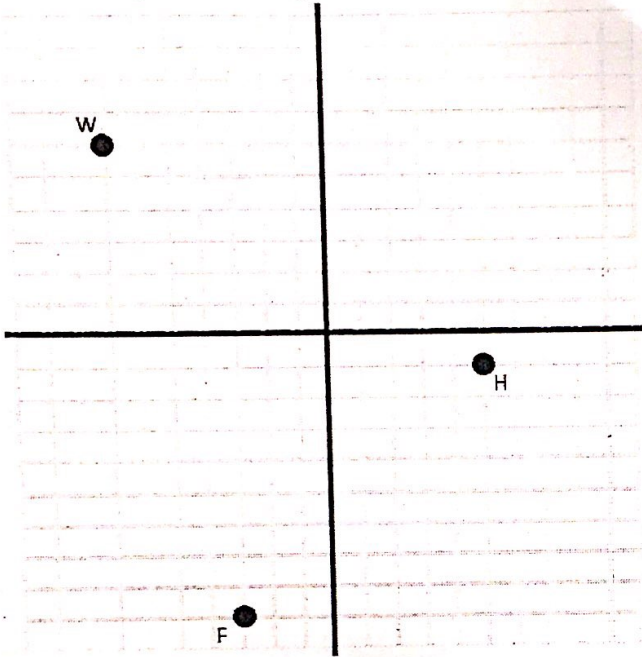
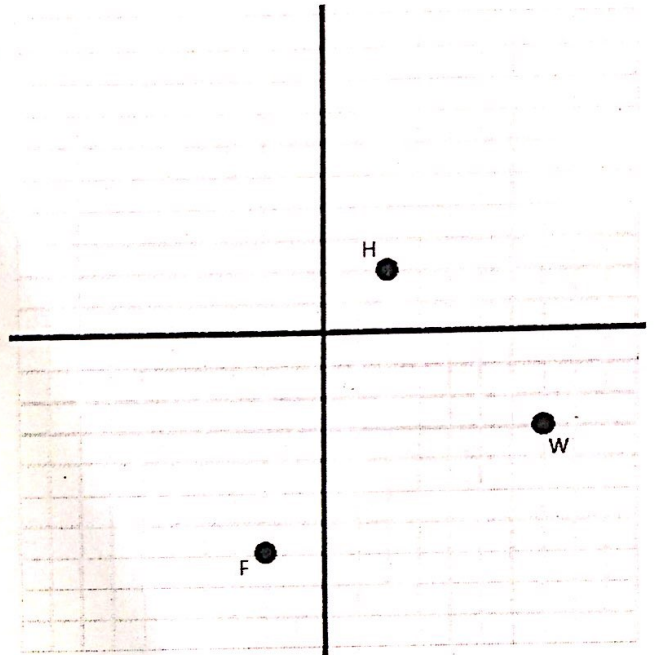


1). Your town has decided to put a pizza shop, at the center of your town, also that is equidistant from your house (H), your best friend's house (H) and your work (W). Determine where the pizza shop will be in your town and construct the circle that passes through all 3 points.

a).



b).



Find the equation for each circle constructed above.

c). Equation: _____

d). Equation: _____

2). Find the area of the following pizza sizes that are offered at the pizza shop. Round to the nearest hundredth.

a). Radius of 8 in.

b). Radius of 6 in.

c). Diameter of 22 in.

Area = _____

Area = _____

Area = _____

3). Would a circumference of 50 in. fit pizza a) from above? Justify your answer.

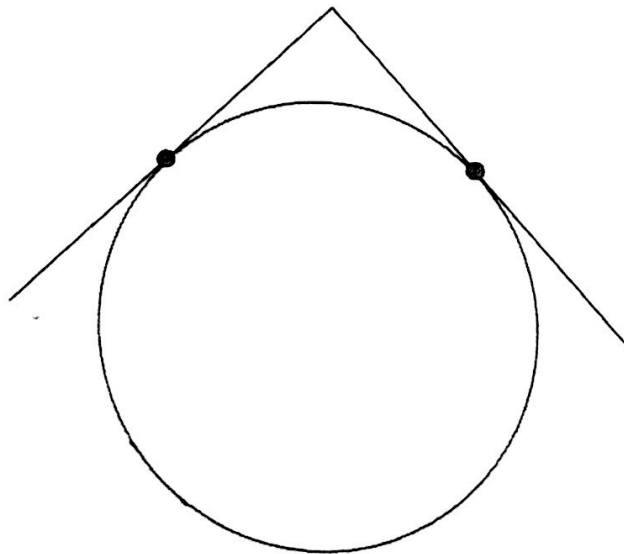
4). Would a circumference of 70 in. fit pizza c) from above? Justify your answer.

5). The pizza shop realizes that people want to order slices and now offers two slice options b) and c) from above.

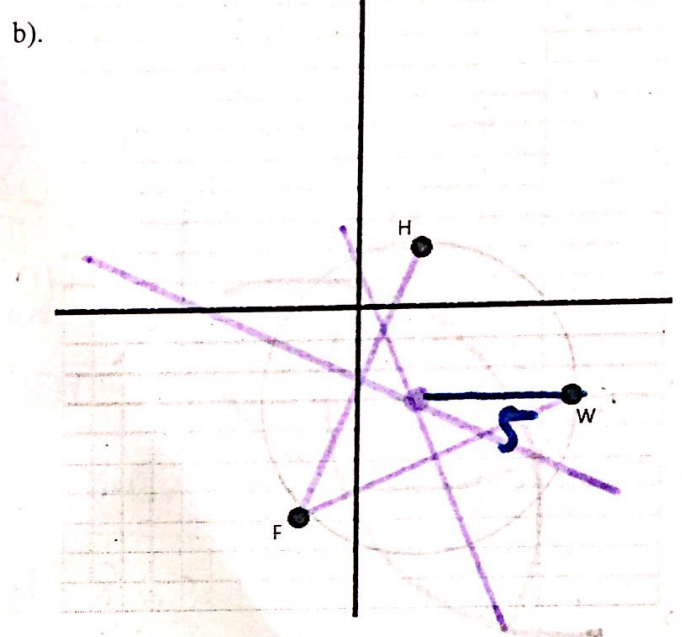
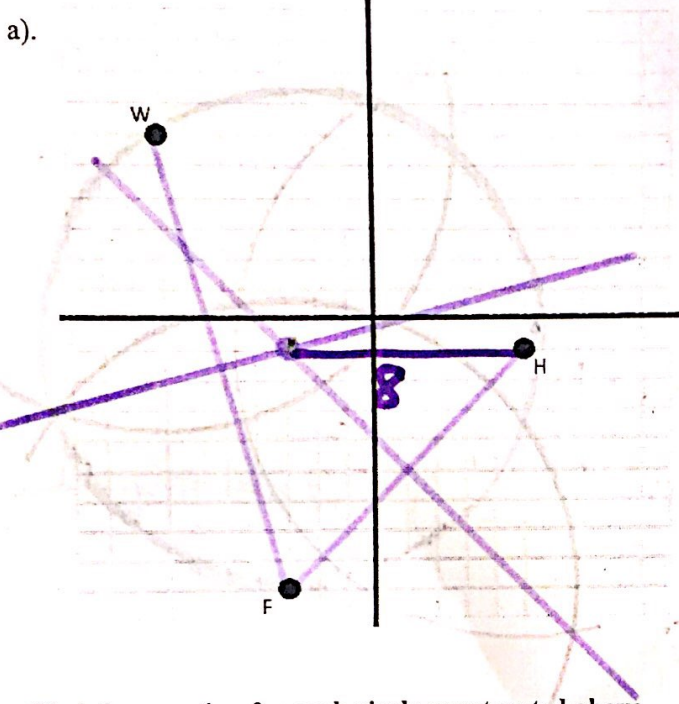
a). To go boxes for **slice b** has an area of 12.57 in^2 . At what degree should the pizza shop cut their slices in order to ensure that their slices fit in the to go container.

b). To go boxes for **slice c** has an area of 52.80 in^2 . At what degree should the pizza shop cut their slices in order to ensure that their slices fit in the to go container.

6). One of the owners of the pizza shop asked if there would be a way to figure out where the center of the pizza is if the pizza was placed in a square box. In the diagram below, only one corner of the box is shown. Help the pizza owners construct the center of the pizza.



1). Your town has decided to put a pizza shop, at the center of your town, also that is equidistant from your house (H), your best friend's house (H) and your work (W). Determine where the pizza shop will be in your town and construct the circle that passes through all 3 points.



Find the equation for each circle constructed above.

c). Equation: $(x+3)^2 + (y+1)^2 = 64$

center: $(-3, -1)$ $r: 8$

d). Equation: $(x-2)^2 + (y+3)^2 = 25$

center: $(2, -3)$ $r: 5$

2). Find the area of the following pizza sizes that are offered at the pizza shop. Round to the nearest hundredth.

a). Radius of 8 in.

$$A = \pi r^2$$

$$A = \pi (8)^2 = 64\pi$$

$$\text{Area} = \frac{64\pi \text{ in}^2 \approx 201.06 \text{ in}^2}$$

b). Radius of 6 in.

$$A = \pi r^2$$

$$A = \pi (6^2) = 36\pi$$

$$\text{Area} = \frac{36\pi \text{ in}^2 \approx 113.10 \text{ in}^2}$$

c). Diameter of 22 in.

$$r = 11 \quad \pi r^2 = A$$

$$\pi (121) = A$$

$$\text{Area} = \frac{121\pi \text{ in}^2 \text{ or } 380.13 \text{ in}^2}$$

3). Would a circumference of 50 in. fit pizza a) from above? Justify your answer.

$$C = 2\pi r$$

$$\frac{50}{2} = \frac{2\pi r}{2}$$

$$\frac{25}{\pi} = \frac{\pi r}{\pi}$$

$$r = 7.96 \text{ in.}$$

no because the radius is bigger than the radius in a.

4). Would a circumference of 70 in. fit pizza c) from above? Justify your answer.

$$C = 2\pi r$$

$$\frac{70}{2\pi} = \frac{2\pi r}{2\pi}$$

$$r = 11.15 \text{ in.}$$

no, the radius of the pizza is bigger than the radius in c).

5). The pizza shop realizes that people want to order slices and now offers two slice options b) and c) from above.

a). To go boxes for slice b has an area of 12.57 in^2 . At what degree should the pizza shop cut their slices in order to ensure that their slices fit in the to go container.

slice b radius 6 in .

$$AOS = \pi r^2 \times \frac{x}{360}$$

$$12.57 = \pi (36) \times \frac{x}{360}$$

$$\frac{12.57}{\pi} = \frac{36x}{10}$$

$$x = 40^\circ$$

40°

check:

$$12.57 = \pi (36) \cdot \frac{40}{360}$$

$$12.57 \checkmark = 12.57$$

b). To go boxes for slice c has an area of 52.8 in^2 . At what degree should the pizza shop cut their slices in order to ensure that their slices fit in the to go container.

slice c radius $= 11$

$$AOS = 52.8$$

$$AOS = \frac{x}{360} \cdot \pi r^2$$

$$52.8 = \frac{x}{360} \cdot 121\pi$$

$$\frac{52.8}{1.06} = \frac{1.06x}{1.06}$$

$$x = 50^\circ$$

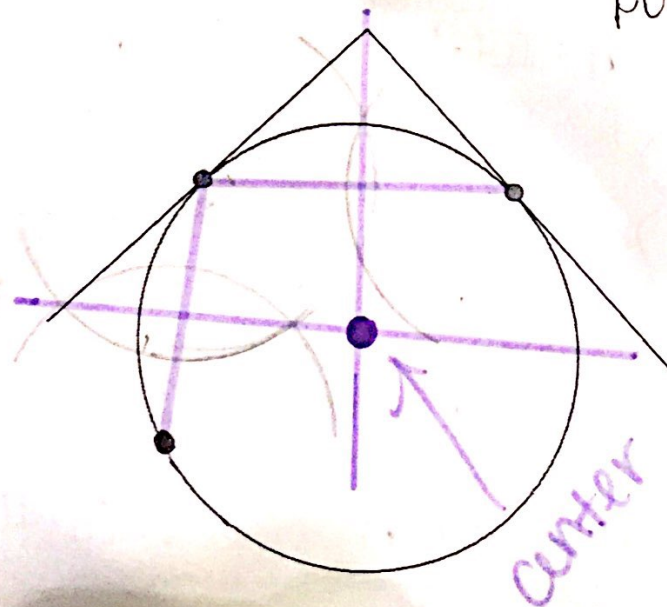
$x = \text{central angle / arc measure}$

check

$$52.8 = \frac{50}{360} \cdot \pi (121)$$

$$52.8 \checkmark = 52.8$$

6). One of the owners of the pizza shop asked if there would be a way to figure out where the center of the pizza is if the pizza was placed in a square box. In the diagram below, only one corner of the box is shown. Help the pizza owners construct the center of the pizza.



place another point on circle then do the same steps as #1 & #2!