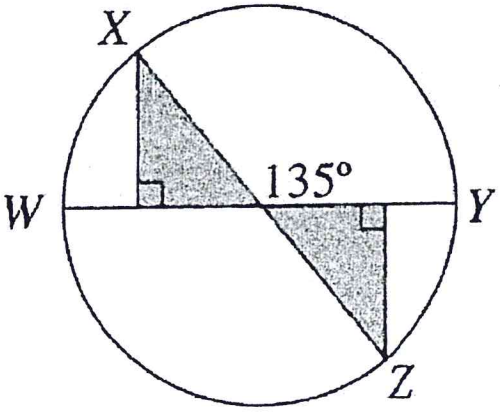
4. A bakery uses a special flour mixture that contains corn, wheat, and rye in the ratio of 3:5:2. If a bag of the mixture contains 5 pounds of rye, how many pounds of wheat does it contain?

(A) 2
(B) 5
(C) 7.5
(D) 10
(E) 12.5

5. If $\overline{WY}$ and $\overline{XZ}$ are diameters with lengths of 12, what is the area of the shaded region?



(A) 36
(B) 30
(C) 18
(D) 12
(E) 9

8. If c is positive, what percent of $3c$ is 9 ?

(A) $\frac{c}{100}\%$ (B) $\frac{c}{3}\%$ (C) $\frac{9}{c}\%$ (D) 3% (E) $\frac{300}{c}\%$

$D\,(-6, 3)$ $E\,(-1, -1)$ $F\,(-1, 3)$

9. The coordinates of points D, E, and F in the xy-plane are given above. What is the perimeter of ΔDEF ?

(A) 12
(B) 20
(C) $9+\sqrt{17}$ (approximately 13.12)
(D) $9+\sqrt{41}$ (approximately 15.40)
(E) $\sqrt{150}$ (approximately 12.25)

Answers

4. A bakery uses a special flour mixture that contains corn, wheat, and rye in the ratio of 3:5:2. If a bag of the mixture contains 5 pounds of rye, how many pounds of wheat does it contain?

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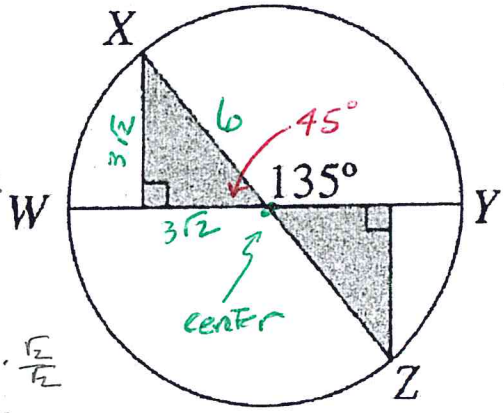
corn : wheat : rye
3 : 5 : 2

$\frac{\text{wheat}}{\text{rye}} = \frac{5}{2} = \frac{x}{5}$

$x = 12.5$

5. If $\overline{WY}$ and $\overline{XZ}$ are diameters with lengths of 12, what is the area of the shaded region?



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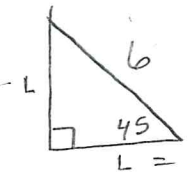
Area of 1 Δ: $\frac{1}{2}(3\sqrt{2})(3\sqrt{2}) = \frac{1}{2}\cdot 9\cdot 2 = 9$

Area of 2 Δs: $2 \times 9 = 18$

45-45-90 Δ: $L = \frac{h}{\sqrt{2}}$



$L = \frac{6}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{6\sqrt{2}}{2} = 3\sqrt{2}$

8. If c is positive, what percent of $3c$ is 9 ?

(A) $\frac{c}{100}\%$ (B) $\frac{c}{3}\%$ (C) $\frac{9}{c}\%$ (D) 3% (E) $\frac{300}{c}\%$

$\frac{\%}{100} = \frac{\text{is}}{\text{of}}$ $\quad 100 \cdot \frac{x}{100} = \frac{9}{3c} \cdot 100$ $\quad x = \frac{900}{3c} = \frac{300}{c}$

$D\,(-6, 3)$ $\quad E\,(-1, -1)$ $\quad F\,(-1, 3)$

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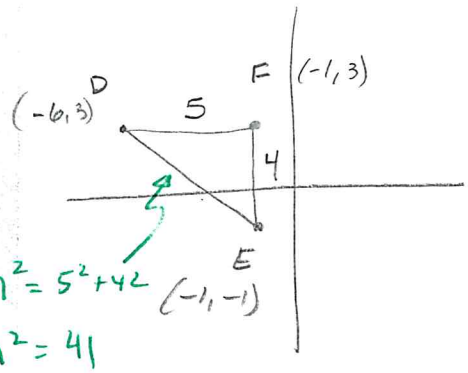

$h^2 = 5^2 + 4^2$

$h^2 = 41$

$h = \sqrt{41}$

$P = 5 + 4 + \sqrt{41}$

$= 9 + \sqrt{41}$