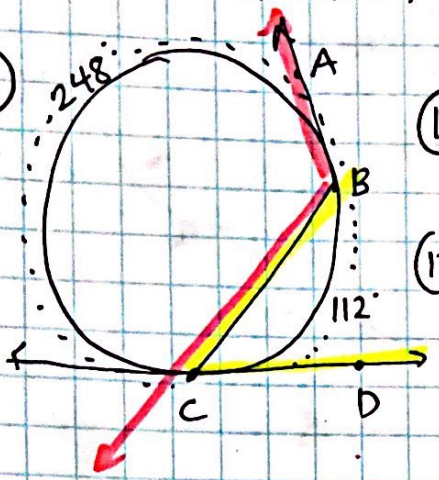
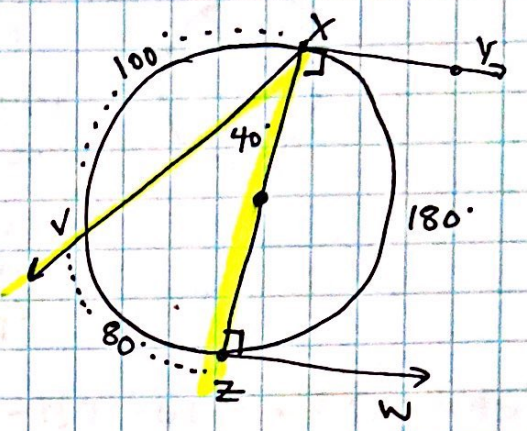
12.5

P.835-837 (16-25all, 27-33all, 39, 40, 42, 43, 47)



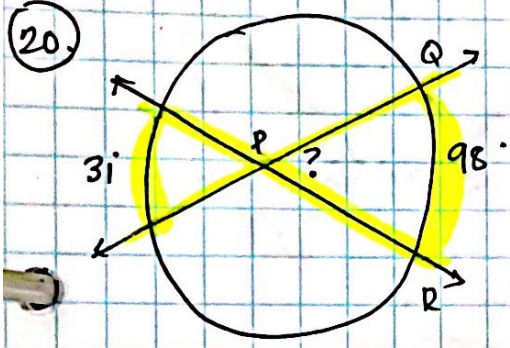

16. $m\angle BCD = \frac{1}{2}(112)$
$= 56°$

17. $m\angle ABC = \frac{1}{2}(248°)$
$= 124°$

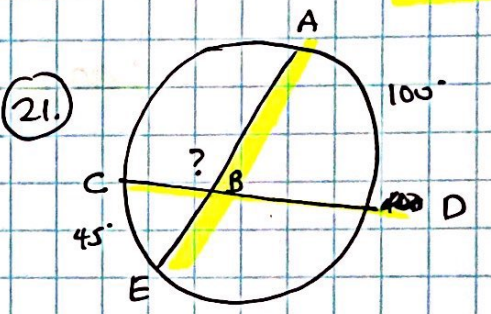



18. $m\angle XZW = 90°$
$\frac{1}{2}(180)$

19. $m\overset{\frown}{XZV} = 180 + 80$
$260°$

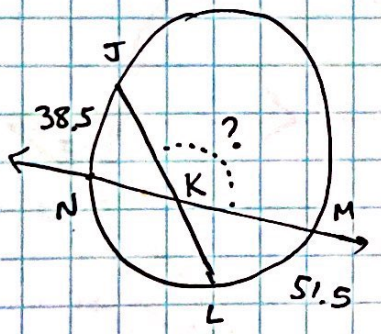



$m\angle QPR = \frac{1}{2}(98+31)$
$= \frac{1}{2}(129)$
$= 64.5$



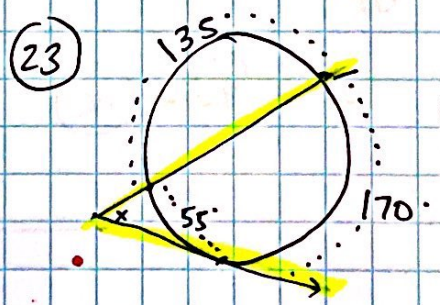

$m\angle ABD = \frac{1}{2}(100+45)$
$= 72.5$

$m\angle ABC = 180 - 72.5$
$= 107.5°$

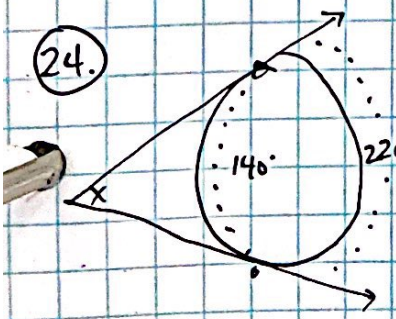



$m\angle MKJ = 180 - m\angle MKL$
$180 - 45 = 135°$

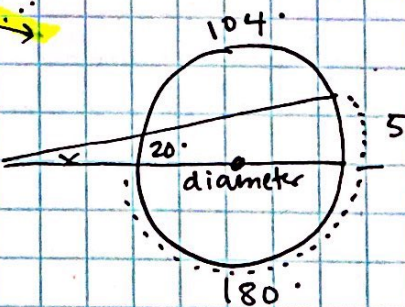
$m\angle MKL = \frac{1}{2}(51.5 + 38.5)$
$= \frac{1}{2}(90) = 45$




$m\ x = \frac{1}{2}(170 - 55)$
$= \frac{1}{2}(115)$
$= 57.5°$

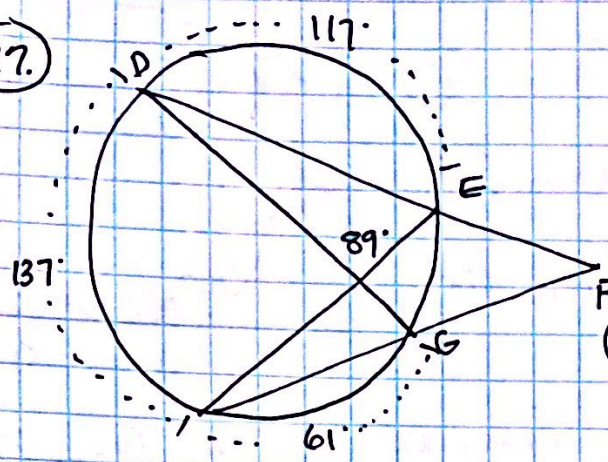



$x = \frac{1}{2}(220 - 140)$
$= \frac{1}{2}(80)$
$40°$
— or —
x supp 140°
so




$x = \frac{1}{2}(56 - 20)$
$= \frac{1}{2}(36)$
$18°$

(27.)




Find $\overset{\frown}{DE}$ first

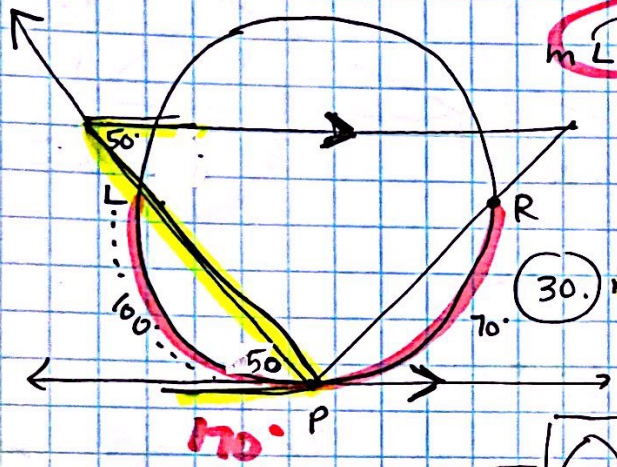

$89 = \frac{x+61}{2}$

$178 = x + 61$

$x = 117°$

(28.) $m\overset{\frown}{DE} = 117°$

↳ $360 - 117° - 137° - 61 = m\overset{\frown}{EG} = 45°$



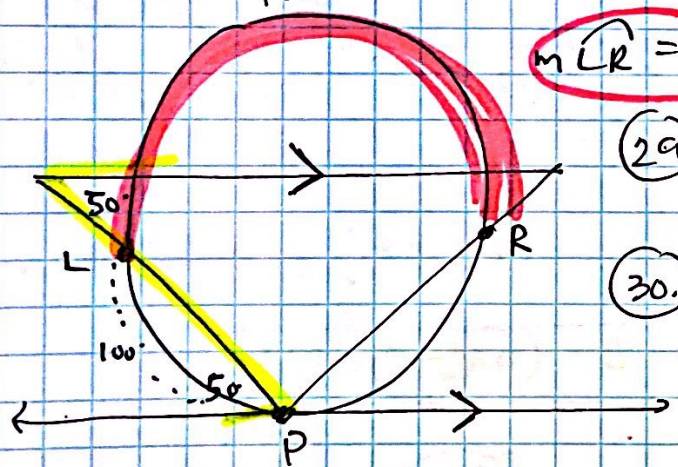

$m\overset{\frown}{LR} = 170°$

(29.) $m\overset{\frown}{RP} = 170° - 100 = 70°$

(30.) $m\overset{\frown}{LP} = 2(50) = 100°$

170°

— OR ⇨

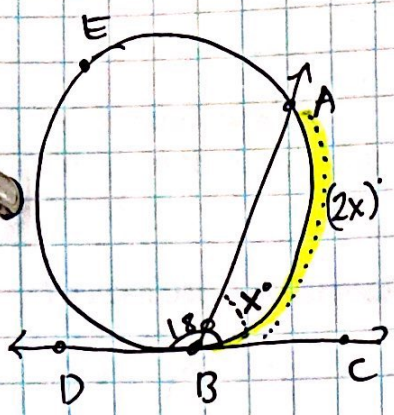



$m\overset{\frown}{LR} = 170$

(29.) $m\overset{\frown}{RP} = 360 - 170 - 100$

$= 90°$

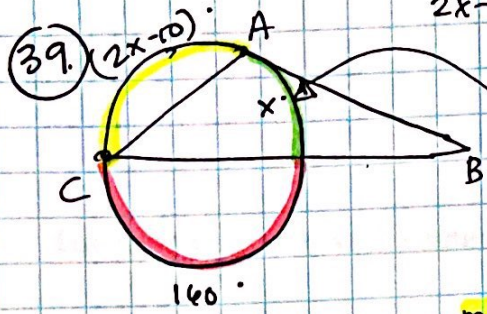
(30.) $m\overset{\frown}{LP} = 100°$




(31.) $m\overset{\frown}{AB} = 2x°$

(32.) $m\angle ABD = (180 - x)°$

(33.) $m\overset{\frown}{AEB} = (360 - 2x)°$




39.

$2x - 10 + x + 160 = 360$

$3x + 150 = 360$

$3x = 210$

$x = 70$

$m\angle A = \frac{1}{2}(160 + 70)$

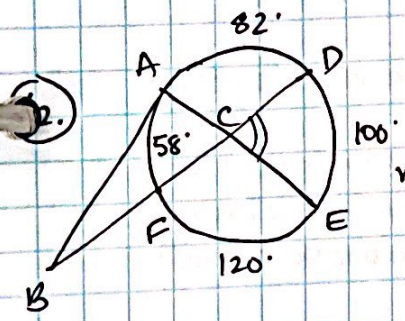
$= 115°$

$m\angle C = \frac{1}{2}(70)°$

$= 35°$

$m\angle B = \frac{1}{2}(130 - 70)$

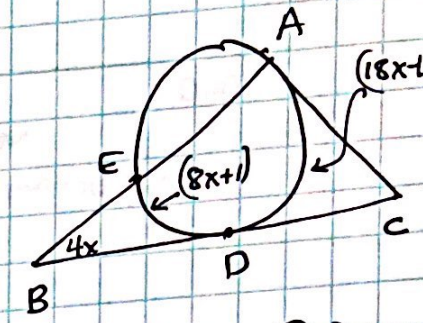
$\frac{1}{2}(60) = 30°$




42.

$m\angle DCE = \frac{1}{2}(100 + 58)$

79° C




40.

$m\angle B = \frac{1}{2}(\overset{\frown}{AD} - \overset{\frown}{ED})$

↓

$4x = \frac{1}{2}(18x - 15 - (8x + 1))$

$4x = \frac{1}{2}(18x - 15 - 8x - 1)$

$4x = \frac{1}{2}(10x - 16)$

$4x = 5x - 8$

$-x = -8$

$x = 8$

$m\angle B = 4(8) = 32°$

$m\angle A = \frac{1}{2}(65 + 129)$

$= 97°$

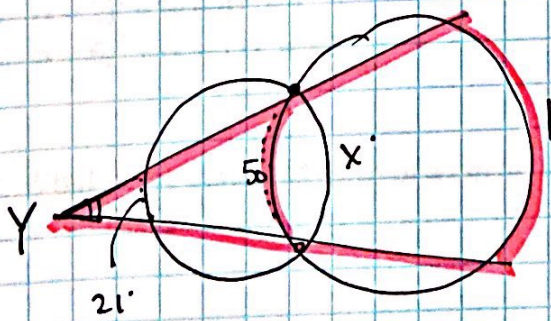
$m\angle C = 180 - 32° - 97°$

$= 51°$

43. $m\angle ABC = \frac{1}{2}(82° - 58°)$

or

$= \frac{1}{2}(m\overset{\frown}{AD} - m\overset{\frown}{AF})$ J




47.

$m\angle Y = \frac{1}{2}(x - 21)$

$m\angle Y = \frac{1}{2}(124 - 50)$

$m\angle Y = \frac{1}{2}(74)$

$= 37°$

$37 = \frac{1}{2}(x - 21)$

$74 = x - 21$

$x = 95°$