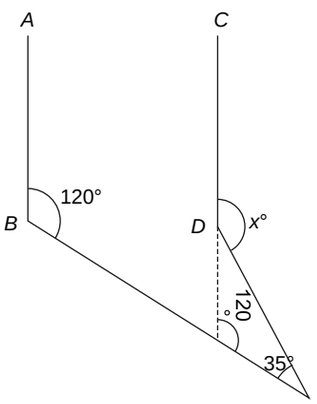
$\angle ABE = 72^\circ$

If $AB \| BD$ then $\angle ABE = x$ [Alternate angles] $x = 72^\circ$

14. $\angle QPR = \angle SRP = 40^\circ$ [Alternative angles]

$x = \angle SRQ = \angle SRP + \angle PRQ$ [Alternative angles] $x = 60^\circ + 40^\circ = 100^\circ$ 15. Extend CD to x



$\angle ABX = \angle CXE = 120^\circ$ $x = 120^\circ + 35^\circ$ [x is exterior angle of ΔDXE) $x = 155^\circ$

16. $y = 180^\circ - 42 = 138^\circ$

$\angle PQW = \angle RSQ = 42^\circ$

$42^\circ + x + 68^\circ = 180^\circ$ $x = 70^\circ$

$x + y = 70^\circ + 138^\circ = 208^\circ$

17. $\angle ACB = 180^\circ - (\angle CAB + \angle CBA)$

$\angle PAB + \angle RBA = 180^\circ$

$$\frac{\angle PAB}{2} + \frac{\angle RBA}{2} = 90$$

$\angle CAB + \angle CBA = 90^\circ$

$\angle ACB = 180^\circ - (90^\circ) = 90^\circ$

18. $\angle RPQ = 180^\circ - (40^\circ + 40^\circ) = 100^\circ$ $x = 180^\circ - (100^\circ + 30^\circ) = 50^\circ$

$30^\circ + y = 40^\circ$

($\angle BPQ$ and $\angle DQP$ are corresponding angles).

$y = 10^\circ$

$x + y = 50^\circ + 10^\circ = 60^\circ$

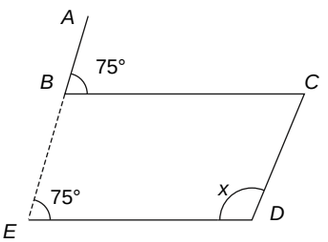
19. $\angle ABC = \angle BCD = 70^\circ$ [Alternate angles]

$\angle ECD = 180^\circ - 140^\circ = 40^\circ$

[As angles FEC and ECD are co-interior angles]

$40^\circ + y = 70^\circ$ $y = 30^\circ$ $EF \| CD$ then $2y + x = 180^\circ$ $x = 180^\circ - 2y = 180^\circ - 60^\circ = 120^\circ$

20. Extend AB to E



$BC \| DE$, so $\angle ABC = \angle AFD = 75^\circ$

$CD \| BE$, hence $x + 75^\circ = 180^\circ$ $x = 105^\circ$

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Page 7 of 7