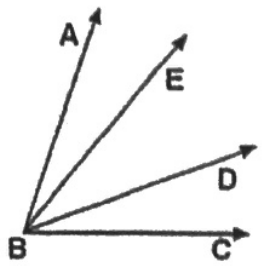
*Complementary: 90
supplementary: 180

Name: _____

Pairs of Angles Practice

estions 1 through 3 refer to the following:



___ 1) If m∠CBD = 20° and m∠DBE = 45°, find m∠EBC.

20+45 = 65°

∠EBC = 65°

___ 2) If m∠ABD = 70°, m∠EBD = 40°, find m∠ABE.

70 − 40 = 30°

∠ABE = 30°

___ 3) If $\overline{BE}$ bisects ∠ABD and m∠ABD = 66°, find m∠ABE.

$\frac{66}{2} = 33°$

∠ABE = 33°

___ 4) Find the measure of the complement of 60°.

90 − 60 = 30°

___ 5) Find the measure of the supplement of 120°.

180 − 120 = 60°

___ 6) Find the measure of the supplement of 60°.

180 − 60 = 120°

___ 7) Two complementary angles have measures in the ratio 2:4. What is the measure of the *larger* angle?

A) 80° C) 60°

B) 120° D) 30°

$\frac{4}{6} = \frac{x}{90}$ $4(90) = 6x$ $360 = 6x$ $60 = x$

___ 8) The measures of two supplementary angles are in the ratio 2:7. Find the measure of the *smaller* angle.

A) 90° C) 70°

B) 40° D) 20°

$\frac{2}{9} = \frac{x}{180}$ $2(180) = 9x$ $360 = 9x$ $40 = x$

___ 9) ∠A and ∠B are supplementary and the measure of ∠B is 5 less than four times ∠A. Find m∠A.

B = 4(A) − 5

4(A) − 5 + A = 180

5A − 5 = 180

5A = 185 → ∠A = 37°

___ 10) ∠A and ∠B are complementary and the measure of ∠B is 2 more than three times the measure of ∠A. Find m∠B.

B = 3(A) + 2 $3A + 2 + A = 90$ $4A + 2 = 90$ $4A = 88$ $A = 22$

∠B = 3(22) + 2

∠B = 68°

___ 11) Is 64° an acute angle, right angle, obtuse angle, or straight angle?

acute ✗

___ 12) Is 145° an acute angle, right angle, obtuse angle or straight angle?

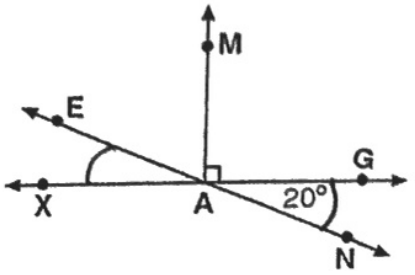
obtuse ∡

___ 13) Is 180° an acute angle, right angle, obtuse angle, or straight angle?

straight ∡

Questions 14 and 15 refer to the following:

In the diagram below, $\overline{XG}$ and $\overline{EN}$ intersect at A, $\overline{AM} \perp \overline{XG}$, and $m\angle GAN = 20°$.



___ 14) Name an angle adjacent to ∠MAG.

∡MAX
∡GAN

___ 15) Find the measure of the supplement of ∠EAG.

20^0

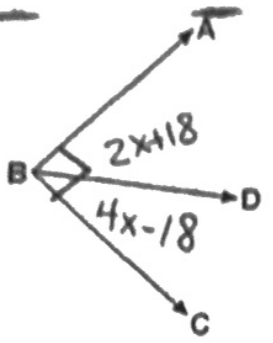
___ 16) ∠1 and ∠2 are supplementary. If $m\angle 1 = (3x - 17)°$ and $m\angle 2 = (5x + 21)°$, find the value of x.

$3x - 17 + 5x + 21 = 180$
$8x + 4 = 180$
$8x = 176$
$\boxed{x = 22}$

___ 17) ∠1 and ∠2 are complementary. If $m\angle 1 = (x + 3)°$ and $m\angle 2 = (4x - 8)°$, find the value of x.

$x + 3 + 4x - 8 = 90$
$5x - 5 = 90$
$5x = 95$
$\boxed{x = 19}$

___ 18) In the accompanying diagram, $\overline{BA} \perp \overline{BC}$, and $\overline{BD}$ is drawn.

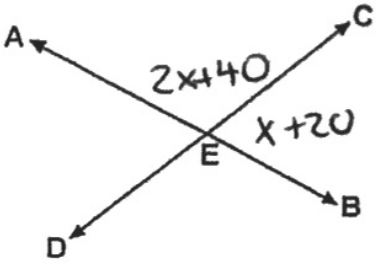


If $m\angle ABD = (2x + 18)°$ and $m\angle CBD = (4x - 18)°$, find x.

complements

$2x + 18 + 4x - 18 = 90$
$6x = 90$
$\boxed{x = 15}$

___ 19) In the accompanying diagram, $\overline{AB}$ and $\overline{CD}$ intersect at E.



If $m\angle AEC = (2x + 40)°$ and $m\angle CEB = (x + 20)°$, find x.

supplements

$2x + 40 + x + 20 = 180$
$3x + 60 = 180$
$3x = 120$
$\boxed{x = 40}$