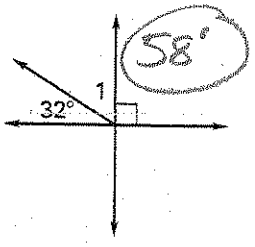
Adv. Geometry 3.6

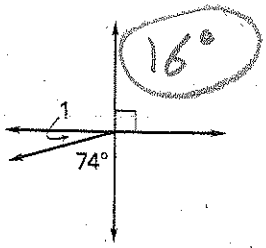
Name Key

Find $m\angle 1$.

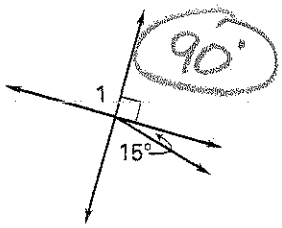
1.



2.



3.



Find the measure of the indicated angle.

4. $\angle 1$ 25°

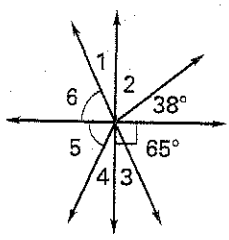
5. $\angle 2$ 52°

6. $\angle 3$ 25°

7. $\angle 4$ 25°

8. $\angle 5$ 65°

9. $\angle 6$ 65°

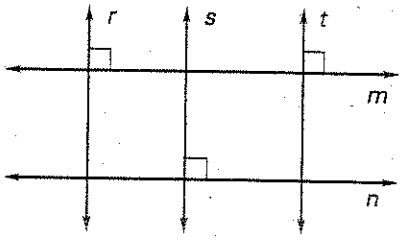


In Exercises 10–12, use the diagram.

10. Is $r \parallel s$? NO

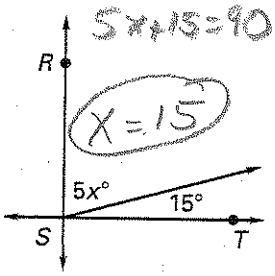
11. Is $m \parallel n$? NO

12. Is $r \parallel t$? Yes

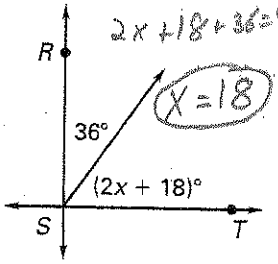


In the diagram, $\overrightarrow{RS} \perp \overrightarrow{ST}$. Find the value of x.

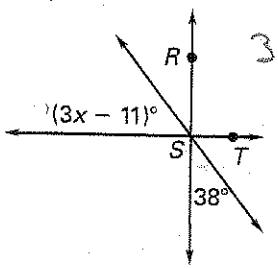
13. $5x+15=90$



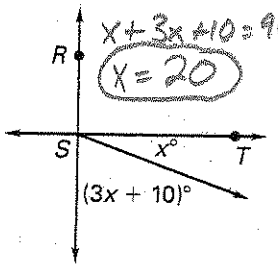
14. $2x+18+36=90$



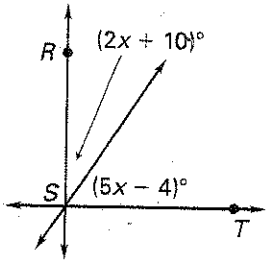
15. $3x-11+38=90$



16. $x+3x+10=90$



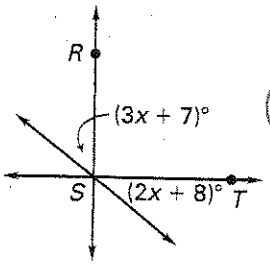
17.



$2x+10+5x-4=90$

$X = 12$

18.



$(3x+7)+(2x+8)=90$

$X = 15$

21. Finding Coordinates Find the value of k such that the line containing point $(2, k)$ is perpendicular to the line $y = 2x - 3$ at point $(4, 5)$.

$m_1 = -\frac{1}{2}$

$\frac{k-5}{2-4} = -\frac{1}{2} \Rightarrow \frac{k-5}{-2} = -\frac{1}{2}$ $\quad k = 6$

$k - 5 = 1$

In Exercises 5–8, use the following information to find the distance between the point and the line.

The distance d between the point (x_1, y_1) and the line $Ax + By = C$ is $d = \frac{|Ax_1 + By_1 - C|}{\sqrt{A^2 + B^2}}$.

5. $(2, 3)$; $4x + 3y = 10$

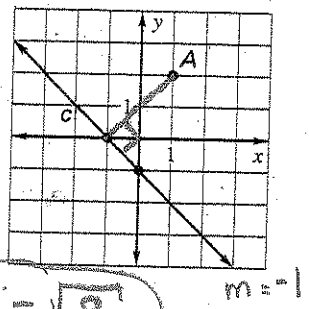
$d = \frac{|(4 \cdot 2) + (3 \cdot 3) - 10|}{\sqrt{4^2 + 3^2}} = \frac{7}{5}$

6. $(-2, 1)$; $x - y = 2$

$d = \frac{|(1 \cdot -2) + (-1 \cdot 1) - 2|}{\sqrt{1^2 + 1^2}} = \frac{|(-2) + (-1) - 2|}{\sqrt{2}} = \frac{5}{\sqrt{2}}$

Find the distance from point *A* to line *c*. Round your answers to the nearest tenth.

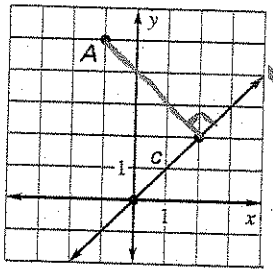
19.



$m = -1$

$d = \sqrt{8} \approx 2.8$

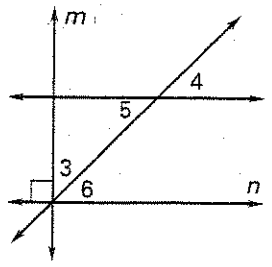
20.



$d = \sqrt{18} \approx 4.2$

3. GIVEN: $m \perp n$, $\angle 3$ and $\angle 4$ are complementary.

PROVE: $\angle 5 \cong \angle 6$



Statements	Reasons
1) $m \perp n$; $\angle 3$ & $\angle 4$ are complem.	1) Given
2) $\angle 3$ & $\angle 6$ are complementary	2) Thm. 3.10 If $m \perp n$, then $\angle 3$ & $\angle 6$ comp.
3) $\angle 4 \cong \angle 6$	3) Congruent complements Theorem
4) $\angle 4 \cong \angle 5$	4) Vertical Angles Theorem
5) $\angle 5 \cong \angle 6$	5) Transitive