$\qquad$ Chapter 3 Review

1. A line that intersects two other lines is called a $\qquad$ .
2. $\qquad$ are used to show lines are parallel.
3. There are 4 names for pairs of angles formed by two lines and a transversal. They are:
$\qquad$ , $\qquad$ ,
$\qquad$ , and $\qquad$ .
4. Corresponding, Alternate Exterior, and Alternate Interior angles are $\qquad$ in measure when the two lines intersected by a transversal are parallel.
5. Consecutive Interior Angles are $\qquad$ or add up to $\qquad$ when the two lines intersected by a transversal are parallel.
6. Any pair of angles formed by two lines and a transversal are either $\qquad$ in measure or are $\qquad$ -.
7. If there is no name for a pair of angles formed by two intersecting lines and a transversal, then they are $\qquad$ .
8. The general equation of a line in slope-intercept form is $\qquad$ . $m$ represents the $\qquad$ and $b$ represents the $\qquad$ .
9. The equation for the slope of a line is $\qquad$ _.
10. The slopes of parallel lines are $\qquad$ .
11. The slopes of perpendicular lines are $\qquad$ .
12. The product of the slopes of perpendicular lines is always equal to $\qquad$ .
13. If you are proving lines are parallel, then you will use a $\qquad$ reason.
14. What is the symbol for parallel lines?
15. What is the symbol for perpendicular lines?

State the mathematical relationship between the pair of angles given and provide a reason.
Ex: $\angle 1$ and $\angle 5 \rightarrow$ Corresponding Angles; $\mathrm{m} \angle 1=\mathrm{m} \angle 5$
16. $\angle 1$ and $\angle 7$
17. $\angle 4$ and $\angle 8$
18. $\angle 6$ and $\angle 7$
19. $\angle 3$ and $\angle 5$
20. $\angle 2$ and $\angle 5$
21. $\angle 2$ and $\angle 4$

22. $\angle 3$ and $\angle 6$

Find the measure of the numbered angle.

$\mathrm{m} \angle 1=$ $\qquad$ $\mathrm{m} \angle 2=$ $\qquad$

$\mathrm{m} \angle 3=$ $\qquad$ $\mathrm{m} \angle 4=$ $\qquad$

$\mathrm{m} \angle 1=$ $\qquad$

Find the measure of $\angle \mathrm{ABC}$.
29.

30.

32.

33.

31.

34.

26.

$\mathrm{m} \angle \mathrm{ABC}=$ $\qquad$

Find the value of the variables.
$\mathrm{m} \angle \mathrm{ABC}=$
28.

$\qquad$
$\mathrm{m} \angle \mathrm{ABC}=$ $\qquad$
27.


Determine if $\mathrm{p} \| \mathrm{q}$. Give a reason for your answer.
35.

36.

39.


40.


Find the measure of the numbered angles.

43.

46.

47.

48.

49.

50.

Given: $\mathrm{j}\|\mathrm{k}, \mathrm{k}\| \mathrm{m}$
Prove: $\angle 1 \cong \angle 3$

Statement

1. $\mathrm{j}\|\mathrm{k}, \mathrm{k}\| \mathrm{m}$

2. a)
2.b) $\qquad$
3. c) $\qquad$
4. d) $\qquad$
5. Given: $\angle \mathrm{ABC} \cong \angle \mathrm{DEC}$

Prove: $\angle \mathrm{BAC} \cong \angle \mathrm{EDC}$

Statement

1. a)
2. $\overline{\mathrm{AB}} \| \overline{\mathrm{ED}}$
3. $\angle \mathrm{BAC} \cong \angle \mathrm{EDC}$
4. Given
2.b) $\qquad$
5. c) $\qquad$
6. Write an equation of the line that passes through the point $(-1,4)$ and is parallel to the line formed by the equation $\mathrm{y}=3 \mathrm{x}-1$.
7. Write an equation of the line that passes through the point $(1,3)$ and is perpendicular to the line formed by the equation $y=-\frac{1}{5} x-1$.
8. Write an equation of the line that passes through the point $(-4,5)$ and is perpendicular to the line formed by the equation $\mathrm{y}=2 \mathrm{x}-3$.
9. Write an equation of the line that passes through the point $(3,0)$ and is parallel to the line formed by the equation $\mathrm{y}=\frac{2}{3} \mathrm{x}+2$.
10. Write an equation of the line that passes through the point $(-2,6)$ and is perpendicular to the line formed by the equation $y=-x+3$.
11. Write an equation of the line that passes through the point $(-1,1)$ and is parallel to the line formed by the equation $y=-x+3$.
12. Write an equation of the line that passes through the point $(-2,4)$ and is perpendicular to the line formed by the equation $\mathrm{y}=\frac{1}{2} \mathrm{x}$.
13. Write an equation of the line that passes through the point $(-2,2)$ and is parallel to the line formed by the equation $\mathrm{y}=3$.

## Answer Key:

1) transversal 2) Arrowheads 3) Corresponding, Alternate Interior, Alternate Exterior, Consecutive
Interior 4) equal 5) supplementary, $180^{\circ}$ 6) equal, supplementary 7) supplementary 8) $y=m x+b$,
slope, $y$-intercept 9) $m=\frac{y_{1}-y_{2}}{x_{1}-x_{2}}$ 10) equal 11) opposite reciprocals 12) -1 13) converse 14) \|
$\begin{array}{lll}\text { 15) } \perp & 16) & \text { Alternate Exterior; } m \angle 1=\mathrm{m} \angle 7 \\ \text { 17) Corresponding; } \mathrm{m} \angle 4=\mathrm{m} \angle 8\end{array}$
$\begin{array}{ll}\text { 18) Linear Pair; } \mathrm{m} \angle 6+\mathrm{m} \angle 7=180^{\circ} & \text { 19) Alternate Interior; } \mathrm{m} \angle 3=\mathrm{m} \angle 5\end{array}$
2) Consecutive Interior; $\mathrm{m} \angle 2+\mathrm{m} \angle 5=180^{\circ}$ 21) Vertical; $\mathrm{m} \angle 2=\mathrm{m} \angle 4$
3) No Relationship; $\mathrm{m} \angle 3+\mathrm{m} \angle 6=180^{\circ}$ 23) $\mathrm{m} \angle 1=132^{\circ}, \mathrm{m} \angle 2=48^{\circ}$ 24) $\mathrm{m} \angle 3=82^{\circ}, \mathrm{m} \angle 4=82^{\circ}$
$\begin{array}{llll}\text { 25) } \mathrm{m} \angle 1=117^{\circ} & \text { 26) } \mathrm{m} \angle \mathrm{ABC}=112^{\circ} & \text { 27) } \mathrm{m} \angle \mathrm{ABC}=102^{\circ} & \text { 28) } \mathrm{m} \angle \mathrm{ABC}=115^{\circ} \\ \text { 29) } \mathrm{x}=30\end{array}$
4) $x=31$
5) $x=24.5$
6) $x=97, y=96$
7) $x=73, y=41$
8) $x=65, y=108$
9) SAMPLE: Alternate Interior Angles Converse 36) SAMPLE: Corresponding Angles Converse
10) SAMPLE: Consecutive Interior Angles Converse 38) SAMPLE: Corresponding Angles Converse
11) SAMPLE: Consecutive Angles Converse
12) No
13) $\mathrm{m} \angle 1=100^{\circ}, \mathrm{m} \angle 2=80^{\circ}, \mathrm{m} \angle 3=100^{\circ}$
14) $\mathrm{m} \angle 1=90^{\circ}, \mathrm{m} \angle 2=115^{\circ}, \mathrm{m} \angle 3=65^{\circ}$
15) $\mathrm{m} \angle 1=47^{\circ}, \mathrm{m} \angle 2=133^{\circ}, \mathrm{m} \angle 3=47^{\circ}$
16) $x=45, y=85$
17) $x=45, y=20$
18) $x=65, y=60$
19) $x=20, y=10$
20) $x=13, y=12$
21) $x=105, y=40, z=35$
22) a) Given
b) Alternate Exterior Angles
c) Corresponding Angles
d) Transitive Property 51) a) $\angle \mathrm{ABC} \cong \angle \mathrm{DEC}$ b) Alternate Interior Angles Converse c) Alternate Interior Angles
$\begin{array}{ll}\text { 52) } y=3 x+7 & \text { 53) } y=-\frac{1}{2} x+3\end{array}$
23) $y=5 x-2$
24) $y=\frac{2}{3} x-2$
25) $y=x+8$
26) $y=-x$
27) $y=-2 x$
28) $y=2$
