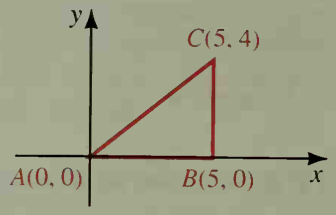
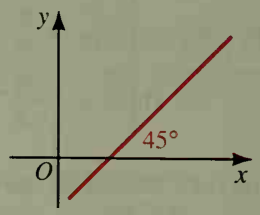
30. **a.** Show that $\tan \angle A$ = slope of $\overline{AC}$.
b. Use trigonometry to find $m\angle A$.



31. A line intersects the x-axis at a 45° angle. What is its slope?



C **32.** A line passes through points $(-2, -1)$ and $(4, 3)$. Where does the line intersect the x-axis? the y-axis?

33. A line through $H(3, 1)$ and $J(5, a)$ has positive slope and makes a 60° angle measured counterclockwise with the positive x-axis. Find the value of a.

34. Find two values of k such that the points $(-3, 4)$, $(0, k)$, and $(k, 10)$ are collinear.

Algebra Review: *Exponents*

Rules of Exponents

When a and b are nonzero real numbers and m and n are integers:

		Examples	
(1)	$a^0 = 1$		$5^0 = 1$
(2)	$a^m \cdot a^n = a^{m+n}$		$x^2 \cdot x^4 = x^{2+4} = x^6$
(3)	$\frac{a^m}{a^n} = a^{m-n}$		$\frac{b^7}{b^3} = b^{7-3} = b^4$
(4)	$(a^m)^n = a^{mn}$		$(y^3)^4 = y^{3 \cdot 4} = y^{12}$
(5)	$a^{-m} = \frac{1}{a^m}$		$6^{-2} = \frac{1}{6^2} = \frac{1}{36}$

Simplify.

1. $(-6)^3$ **2.** $(-5)^4$ **3.** 3^{-2} **4.** 2^{-3}

5. $(-4)^{-3}$ **6.** $\left(\frac{2}{3}\right)^{-2}$ **7.** $\left(\frac{5}{3}\right)^{-3}$ **8.** 15^0

9. $(-1)^{20}$ **10.** $(-1)^{99}$ **11.** $2^3 \cdot 2^2 \cdot 2^{-4}$ **12.** $4^2 \cdot 3^3 \cdot 2^{-3}$

Simplify. Use only positive exponents in your answers.

13. $r^5 \cdot r^8$ **14.** $x^{-1} \cdot x^{-2}$ **15.** $\frac{r^9}{r^4}$ **16.** $\frac{t^3}{t^5}$

17. $a \cdot a^{-1}$ **18.** $(x^2)^{-2}$ **19.** $(b^4)^2$ **20.** $(s^5)^3$

21. $(3y^2)(2y^4)$ **22.** $(4x^3y^2)(-3xy)$ **23.** $(5a^2b^3)(a^{-2}b)$ **24.** $(-2st^5)(-4st^{-3})$