1. What are the solutions to each equation?
a. $\sqrt{9 x+10}=x$

b. $10=\sqrt{\frac{x}{2}}-3$

c. $\frac{3}{x}=\sqrt{x-1}+9$
$13=\sqrt{x_{13}}$
2. The equation $s=2 \sqrt{5 x}$ can be used to estimate the speed, $s$, of a car in miles per hour, given the length in feet, $x$, of the tire marks it leaves on the ground. A car traveling at a speed of 90 miles per hour came to a sudden stop. According to the equation, how long would the tire marks be for this car?
A. 355 feet
B. 380 feet
C. 405 feet
D. 430 feet
3. Identify the type of variation (inverse, direct, or neither)
a. The amount of gasoline inverse purchased as its price declines.
b. The amount of money earned and the number of hours worked

4. Find the zeros:
5. Find the vertex of $y=(x-3)^{2}-2$

| $x^{2}-3=33$ |  |
| :--- | :--- |
| A. $x=6,-6$ <br> B. $x=\sqrt{30}$ <br> C. $x=18,-18$ <br> D. $x=1296$ | $X=6,-6$ |

A. $x=6,-6$
B. $x=\sqrt{30}$
C. $x=18,-18$
D. $x=1296$
28. Solve for $\mathrm{x}: 2 \sqrt{2 x+4}=8$

29. Suppose y varies directly with x , and $\mathrm{y}=16$ when $\mathrm{x}=8$. Find y when $\mathrm{x}=16$.

$$
y=k x \quad 16=k .8(k=2 \quad y=2 \alpha
$$

$$
\begin{aligned}
& 16=k . k=2 \\
& \text { le square root function that is compressed vertical } \\
& \mathrm{ft} 2 .
\end{aligned}
$$

31. The volume V of a gas varies inversely as the pressure P on it. If the volume is 240 $\mathrm{cm}^{3}$ under pressure of $30 \mathrm{~kg} / \mathrm{cm}^{2}$, what pressure has to be applied to have a volume of $160 \mathrm{~cm}^{3}$ ?

$$
V=\frac{K}{P}
$$

$$
240=\frac{k}{30}
$$



