Solve the following equations. Show all work neatly

1. $3(x-5)=11$

$$\frac{3(x-5)}{3}=\frac{11}{3}$$

$x-5=3.67$
$x=8.67$

2. $-14=2(a+1)$

$$\frac{-14}{2}=\frac{2(a+1)}{2}$$

$-7=a+1$

$-8=a$

3. $\frac{n}{2}+5=-1$

$$\frac{n}{2}=-6$$

$n=-12$

4. $7=2+\frac{3x}{4}$

$5=\frac{3x}{4}$

$$\frac{20}{3}=\frac{3x}{3}$$

$6.67=x$

5. $8-\frac{c}{2}=5$

$8=5+\frac{c}{2}$

$3=\frac{c}{2}$

$6=c$

6. $\frac{6}{x}+4=16$

$$\frac{6}{x}=12$$

$$\frac{6}{12}=\frac{12x}{12}$$

$0.5=x$

7. $\frac{x+3}{4}+1=7$

$$\frac{x+3}{4}=6$$

$x+3=24$

$x=21$

8. A balloon is released into the air from a height of 12 m. It rises at a rate of 0.5 m/second. A) Write an equation to represent this situation. B) How long until the balloon reaches a height of 47 m?

$H=12+0.5S$

$47=12+0.5S$

$$\frac{35}{0.5}=\frac{0.5S}{0.5}$$

$70=S$

14) A number is doubled and then 7 is added. The result is 31. What is the number?

$2x + 7 = 31$

$$\frac{2x}{2} = \frac{24}{2}$$

$x = 12$

$\boxed{\# \text{ is } 12}$

15) At the Haliburton Golf Club, the entrance fee is $50, while the per game charge is $7.50 per game. How many games can be played for a total of $290?

$C = 50 + 7.50n$

$290 = 50 + 7.50n$

$$\frac{240}{7.50} = \frac{7.50n}{7.50}$$

$32 = n$

$\boxed{32 \text{ games played}}$

16) A local pizza store charges $5 for the basic pizza plus $0.50 per topping. How many toppings on a $10 pizza.

$C = 0.50n + 5$

$10 = 0.5n + 5$

$$\frac{5}{0.5} = \frac{0.5n}{0.5}$$

$10 = n$

$\boxed{10 \text{ toppings}}$

17) A mountain climber begins his climb at 750 m and proceeds to climb at a rate of 20 m per minute. How long will it take to climb to an altitude of 1290 m?

$A = 20x + 750$

$1290 = 20x + 750$

$$\frac{540}{20} = \frac{20x}{20}$$

$27 = x$

$\boxed{27 \text{ minutes}}$

18) An airplane at an altitude of 3000m begins its descent at 150m/minute. How long until the plane lands? -—an altitude of zero---

$A = 3000 - 150n$

$0 = 3000 - 150n$

$$\frac{-3000}{-150} = \frac{-150n}{-150}$$

$20 = n$

$\boxed{20 \text{ min}}$