Name: KEY

Erroneous Equations

Find the error in the solution below. When you find the error, **explain what the error is** and finish solving the equation correctly. Remember to check your answer.

1) $3(x-2)-2(x-7)=11$

$3x-6-2x-14=11$

$x+20=11$

$x=-9$

Explain the error you found.

When distributing the 2 to (x-7), you should notice that it is actually a -2 and the 7 is negative also. Therefore, $-2(x+(-7))$ is actually equal to $-2x+14$ and not $-2x-14$.

Correct Solution: Solve the equation above correctly.

$3(x-2)-2(x-7)=11$

$3(x+(-2))+-2(x+(-7))=11$

$3(x)+3(-2)+-2(x)+-2(-7)=11$

$3x+(-6)+(-2x)+14=11$

$3x+(-2x)+(-6)+14=11$

$1x+8=11$

$-8 \quad -8$

$x=3$

Find the error in the solution below. When you find the error, **explain what the error is** and finish solving the equation correctly. Remember to check your answer.

2) $3(5 - 2n) + 9n = 9$

$6n - 15 + 9n = 9$

$15n - 15 = 9$

$15n = 24$

$n = 1.6$

Explain the error you found.

When distributing 3(5-2n), you need to notice that the 2n is actually negative. So 3(5+(-2n) is actually 15+(-6n) or -6n+15 not 6n-15.

Correct Solution: Solve the equation above correctly.

$3(5-2n)+9n=9$

$3(5+(-2n))+9n=9$

$3(5)+3(-2n)+9n=9$

$15+(-6n)+9n=9$

$15+3n=9$

$-15 \quad -15$

$3n=-6$

$\frac{3n}{3}=\frac{-6}{3}$

$\boxed{n=-2}$