

**Worksheet Exercise 4.4.C.**

Name \_\_\_\_\_

## Quantificational Deductions

Class \_\_\_\_\_ Date \_\_\_\_\_

**Part C, 6–10.** Symbolize the following arguments in the spaces provided, and give deductions for them. Check the symbolization answers at the end.

(6) Some pink horses are rare and expensive. So, expensive horses exist.

1. \_\_\_\_\_ Prem
- So, \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
8. \_\_\_\_\_
9. \_\_\_\_\_
10. \_\_\_\_\_
11. \_\_\_\_\_

(7) All pink horses are rare. Some wild horses are pink. So, some horses are rare.

1. \_\_\_\_\_ Prem
2. \_\_\_\_\_ Prem
- So, \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
8. \_\_\_\_\_
9. \_\_\_\_\_
10. \_\_\_\_\_
11. \_\_\_\_\_

(8) Every person in Chicago views the Lake and worries a lot. All Lake viewers enjoy nature. Beth is a person in Chicago. So, some worriers enjoy nature.

1. \_\_\_\_\_ Prem
2. \_\_\_\_\_ Prem
3. \_\_\_\_\_ Prem
- So, \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
8. \_\_\_\_\_
9. \_\_\_\_\_
10. \_\_\_\_\_
11. \_\_\_\_\_
12. \_\_\_\_\_
13. \_\_\_\_\_

(9) Supply the missing steps and reasons

1.  $(\forall x)(Fx \ \& \ Gx)$  Prem
2.  $(\forall x)(Ox \ \& \ Px)$  Prem
3. \_\_\_\_\_
4.  $Fa \ \& \ Ga$  \_\_\_\_\_
5. \_\_\_\_\_ 2, U.I.
6. \_\_\_\_\_
7. \_\_\_\_\_
8. \_\_\_\_\_ 6,7, Conj
9.  $(\forall x)(Gx \ \& \ Px)$  \_\_\_\_\_

(10) Supply the missing steps and reasons

1.  $(\forall x)(Dx \ \& \ Sx)$  Prem
2.  $[(\forall x)Sx] \supset (Ra \ \& \ Qb)$  Prem
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6.  $(\forall x)Sx$  \_\_\_\_\_
7. \_\_\_\_\_
8. \_\_\_\_\_ 7, Simp
9.  $(\exists x)Rx$  \_\_\_\_\_

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Some help: Here is how you symbolize these arguments. Of course, you have to give the deductions too.

(1)  $(\exists x)[(Px \ \& \ Hx) \ \& \ (Rx \ \& \ Ex)] \ \therefore \ (\exists x)(Ex \ \& \ Hx)$

(2)  $(\forall x)[(Px \ \& \ Hx) \ \supset \ Rx] \ , \ (\exists x)[(Wx \ \& \ Hx) \ \& \ Px] \ \therefore \ (\exists x)(Hx \ \& \ Rx)$

(3)  $(\forall x)[(Px \ \& \ Cx) \ \supset \ (Lx \ \& \ Wx)] \ , \ (\forall x)(Lx \ \supset \ Ex) \ , \ Pb \ \& \ Cb \ \therefore \ (\exists x)(Wx \ \& \ Ex)$