

Problem Set 5  
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Problem 1:

$\langle \text{expr} \rangle = \langle \text{expr} \rangle * \langle \text{expr} \rangle$   
|  $\langle \text{expr} \rangle * \langle \text{int} \rangle$   
|  $\langle \text{expr} \rangle * -\langle \text{nat} \rangle$   
|  $\langle \text{expr} \rangle * -\langle \text{digit} \rangle \langle \text{nat} \rangle$   
|  $\langle \text{expr} \rangle * -0 \langle \text{nat} \rangle$   
|  $\langle \text{expr} \rangle * -0 \langle \text{digit} \rangle$   
|  $\langle \text{expr} \rangle * -07$   
|  $\langle \text{expr} \rangle + \langle \text{expr} \rangle * -07$   
|  $\langle \text{expr} \rangle + \langle \text{nat} \rangle * -07$   
|  $\langle \text{expr} \rangle + \langle \text{digit} \rangle * -07$   
|  $\langle \text{expr} \rangle + 2 * -07$   
|  $\langle \text{int} \rangle + 2 * -07$   
|  $\langle \text{nat} \rangle + 2 * -07$   
|  $\langle \text{digit} \rangle \langle \text{nat} \rangle + 2 * -07$   
|  $\langle \text{digit} \rangle \langle \text{digit} \rangle + 2 * -07$   
|  $\langle \text{digit} \rangle 2 + 2 * -07$   
|  $12 + 2 * -07$

Problem 2:

<stmt> ::= for <id> = <expr> to <expr> do <stmt>

| for <letter> = <expr> to <expr> do <stmt>

| for x = <expr> to <expr> do <stmt>

| for x = <int> to <expr> do <stmt>

| for x = -<nat> to <expr> do <stmt>

| for x = -<digit><nat> to <expr> do <stmt>

| for x = -1<nat> to <expr> do <stmt>

| for x = -1<digit> to <expr> do <stmt>

| for x = -12 to <expr> do <stmt>

| for x = -12 to <int> do <stmt>

| for x = -12 to <nat> do <stmt>

| for x = -12 to <digit><nat> do <stmt>

| for x = -12 to 1<nat> do <stmt>

| for x = -12 to 1<digit> do <stmt>

| for x = -12 to 10 do <stmt>

| for x = -12 to 10 do {<stmts>}

| for x = -12 to 10 do {<stmt>; <stmts>}

| for x = -12 to 10 do {<id> = <expr>; <stmts>}

| for x = -12 to 10 do {<letter> = <expr>; <stmts>}

| for x = -12 to 10 do {y = <expr>; <stmts>}

| for x = -12 to 10 do {y = <int>; <stmts>}

| for x = -12 to 10 do {y = 0; <stmts>}

| for x = -12 to 10 do {y = 0; pass}

