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Short Questions

Problem 1

```matlab
a =10;
b = 2.5*(power(10,23));
c = 2+3i;
d = exp(j*((2/3)*pi));
```

Problem 2

```matlab
aVec = [3.14 15 9 26 ];
bVec = [2.71 ; 8 ; 28 ; 182];
for cVec = 5.0 :-0.2 :-5.0
% disp(cVec);
end
```

Problem 3

```matlab
%a
a1Mat = ones(9);
%disp(aMat);
aMat = 2*ones(9);
%disp(aMat);
%b
bMat = zeros(9);
b1 = [1 2 3 4 5 4 3 2 1];
bMat = diag(b1);
%disp(bMat);
%c
c1Mat = 1:100;
cMat = reshape(c1Mat,[10,10]);
%disp(cMat);
%d
dMat = NaN(3,4);
%disp(dMat);
%e
eMat = [13 -1 5 ; -22 10 -87];
%disp(eMat);
%f
rng (0,'twister');
fMat = randi([-3,3],5,3);
%disp(fMat);
```

Problem 4

```matlab
%a
x = 1/(1+ exp((-a+15)/6));
%disp(x);
%b
y = ((sqrt(a))+ (b^(1/21)))^pi;
%disp(y);
```

```matlab
Problem 5
%a
xMat1 = (aVec.*bVec);
xMat2 = aMat^2;
%xMat3 = xMat1.*xMat2;
%disp(xMat3);
%b
yMat = bVec.*aVec;
%disp(yMat);
%c
zMat1 = det(cMat);
zMat2 = transpose(aMat.*bMat);
zMat = zMat1*zMat2;
%disp(zMat1);
%disp(zMat2);
disp(zMat);


Problem 6
t = 0:pi/100 : 2*pi;
y = sin(t);
plot(t,y);
t = 0:pi/50 : 2*pi;
y = sin(t);
plot(t,y);
hold on
y = cos(t);
plot(t,y,'--');
xlabel('0< x <2/pi');
ylabel('Sine and Cosine values');
title('Sine and Cosine Curves');
legend('Sin','Cos');
ylim([-1.4 1.4]);
xlim([0 2*pi]);
```