

## MATH 241 MATLAB Project 4 (Quiz) Sample 1

---

**Directions:** For those questions which ask for a Matlab command simply write do the command as you would type it into Matlab. For those which give a command and request the effect simply write a sentence saying what that command would do. Point values are on the right.

---

**Important:** For all questions assume that all variables needed are defined symbolically.

1. What command would factor the expression  $x^4 + x^2 - 4x$ ?

Answer:

[2 pt]

2. What command would solve the equation  $x^3 + x^2 - 3x + 1 = 4$ ?

Answer:

[2 pt]

3. What command would find  $\frac{d}{dx} \cos(4x^2 + e^x)$ ?

Answer:

[2 pt]

4. What command would find  $\int \frac{\sqrt{x+1}}{x-2} dx$ ?

Answer:

[2 pt]

5. What command would find the area below the graph of  $f(x) = x + x^2$  on the interval  $[1, 4]$ ?

Answer:

[3 pt]

6. Assuming that  $u$  and  $v$  are previously defined vectors, what command would find a vector perpendicular to both?

Answer:

[2 pt]

7. What command would plot the surface  $f(x, y) = xe^{-xy}$ ?

Answer:

[2 pt]

8. What command would plot the vector-valued function  $\vec{r}(t) = t^2 \hat{i} + \sin t \hat{j} + t \hat{k}$  on  $[0, 3]$ ?

Answer:

[2 pt]

9. What command would find  $\int_0^\pi \int_0^{\sin t} r^2 \tan^2(t) dr dt$ ?

Answer:

[2 pt]

10. What would the following command pair do?

```
[x,y]=meshgrid(-5:1:5,-5:1:5);
```

```
quiver(x,y,y/5,-x/5,0);
```

Answer:

[2 pt]

11. What would the following command pair do?

```
f=inline('x+e^x=10')
```

```
fzero(f,1) do?
```

Answer:

[2 pt]

12. What would the command `int(x^2,x,0,2)` give for output?

Answer:

[2 pt]

$$\int_t^h e^n dx$$