Name: Sol

PSID:

Calculus 1432
Quiz 7
February 28, 2014

Each one is worth ½ point. So, get them all right, you can score 11 out of 10 possible.

C 1. $r = 2$

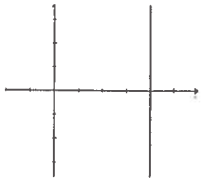
D 2. $r = 4\cos\theta$

E 3. $r = 4\sin\theta$

B 4. $r = 4\csc\theta$

A 5. $r = 4\sec\theta$

A.



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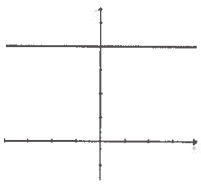

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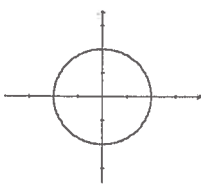

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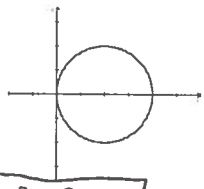

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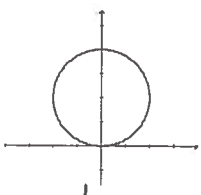


$x^2+y^2=r^2$

$\cos\theta = \frac{x}{r}$

$\sin\theta = \frac{y}{r}$

2. $r = 4\cdot\frac{x}{r} \Rightarrow r^2 = 4x$
$\Rightarrow x^2+y^2 = 4x$
$\Rightarrow (x^2-4x+4)+y^2 = 4 \Rightarrow \boxed{(x-2)^2+y^2=4}$

3. $r = 4\frac{y}{r} \Rightarrow r^2 = 4y \Rightarrow x^2+y^2 = 4y$
$\Rightarrow x^2+(y^2-4y+4) = 4 \Rightarrow \boxed{x^2+(y-2)^2=4}$

4. $r = 4\cdot\frac{1}{\sin\theta} = 4\cdot\frac{r}{y} \Rightarrow \boxed{y=4}$

5. $r = 4\frac{1}{\cos\theta} = 4\frac{r}{x} \Rightarrow \boxed{x=4}$

Matching

D 6. $r = -6\cos\theta$

B 7. $6 = r\sin\theta$

E 8. $r = -6\sin\theta$

A 9. $-3 = r\cos\theta$

C 10. $r = 3$

A. Vertical Line

B. Horizontal Line

C. Circle, center (0, 0), radius = 3

D. Circle, center (–3, 0), radius = 3

E. Circle, center (0, –3), radius = 3

6. $m=1 \Rightarrow$ circle. $r = -6\cdot\frac{x}{r} \Rightarrow x^2+y^2 = -6x \Rightarrow (x^2+6x+9)+y^2 = 9$
$\Rightarrow \boxed{(x+3)^2+y^2=9}$

7. $6 = r\sin\theta = r\cdot\frac{y}{r} \Rightarrow \boxed{y=6}$

complete the square

8. $r = -6\sin\theta = -6\cdot\frac{y}{r} \Rightarrow r^2 = -6y \Rightarrow x^2+y^2 = -6y \Rightarrow x^2+y^2+6y+9 = 9$
$\Rightarrow \boxed{x^2+(y+3)^2=9}$

9. $-3 = r\cos\theta = r\cdot\frac{x}{r} \Rightarrow \boxed{x=-3}$

10.

Match the equation with the graph.

Through [r,θ]

B 11. $r = 2 + 4\sin\theta$ — |a|<|b| loop [2,0]

C 12. $r = 2 + 4\cos\theta$ — |a|<|b| loop [6,0]

A 13. $r = 2 + 2\cos\theta$ — |a|=|b| dimple [4,0]

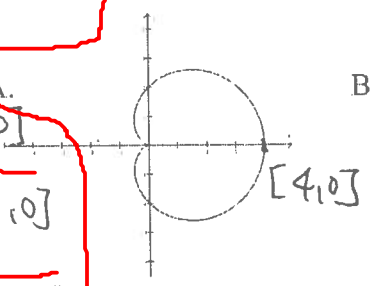
E 14. $r = 4 + 2\sin\theta$ — |a|>|b| cardioid [4,0]

D 15. $r = 4 + 2\cos\theta$ — |a|>|b| cardioid [6,0]

F 16. $r = 2 + 2\sin\theta$ — |a|=|b| dimple [2,0]

a b

A.



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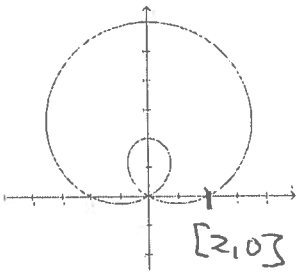

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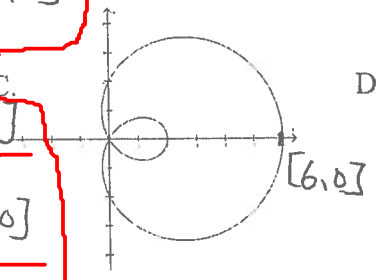

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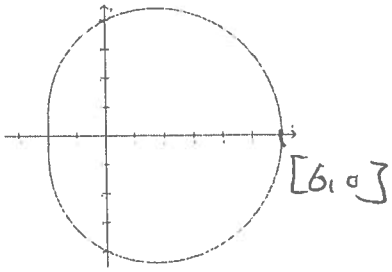

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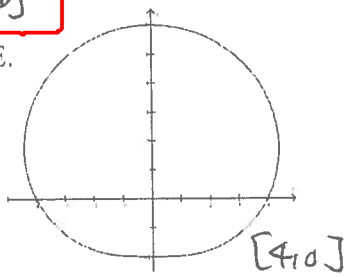

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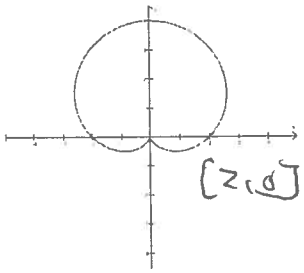


Match the equation with the graph.

Through [r,θ]

A 17. $r = 2\cos 2\theta$ — 4 petals [2,0]

C 18. $r = 2\sin 4\theta$ — 8 petals [0,0]

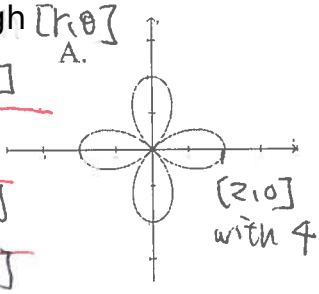
D 19. $r = 2\sin 2\theta$ — 4 petals [0,0]

F 20. $r = 2\cos 3\theta$ — 3 petals [2,0]

E 21. $r = 2\sin 3\theta$ — 3 petals [0,0]

B 22. $r = 2\cos 4\theta$ — 8 petals [2,0]

A.



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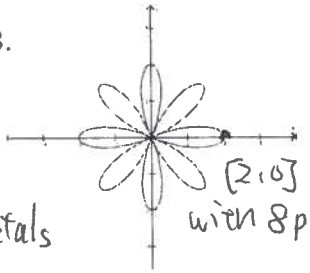

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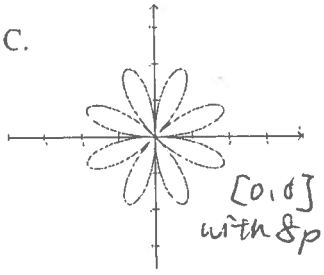

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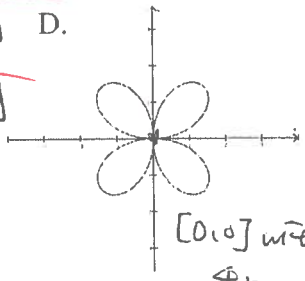

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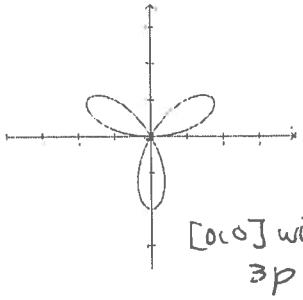
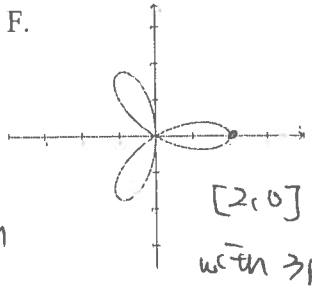
F.