

SM3 4.2 odd answer key

1. $\lim_{x \rightarrow -\infty} f(x) = -\infty$ $\lim_{x \rightarrow \infty} f(x) = \infty$

2.

3. $\lim_{x \rightarrow -\infty} f(x) = -\infty$ $\lim_{x \rightarrow \infty} f(x) = \infty$

4.

5. $\lim_{x \rightarrow -\infty} f(x) = -\infty$ $\lim_{x \rightarrow \infty} f(x) = -\infty$

6.

7.

| Zero | Multiplicity | Touch/Cross |
|------|--------------|-------------|
| -1 | 4 | Touch |
| 5 | 3 | Cross |

8.

9.

| Zero | Multiplicity | Touch/Cross |
|------|--------------|-------------|
| 3 | 1 | Cross |
| -2 | 2 | Touch |

10.

11.

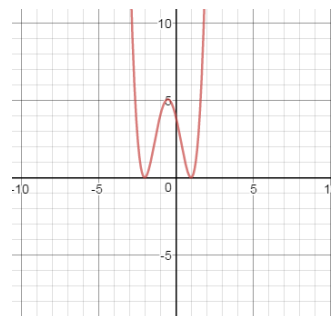
| Zero | Multiplicity | Touch/Cross |
|------|--------------|-------------|
| 4 | 1 | Cross |
| -5 | 3 | Cross |
| 1 | 2 | Touch |

12.

13.

| Zero | Multiplicity | Touch/Cross |
|------|--------------|-------------|
| 1 | 2 | Touch |
| -2 | 2 | Touch |

$\lim_{x \rightarrow -\infty} f(x) = \infty$ $\lim_{x \rightarrow \infty} f(x) = \infty$

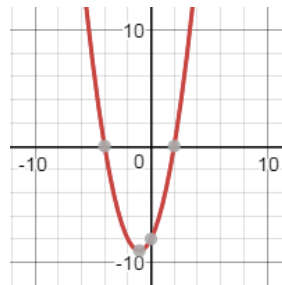


15.

| Zero | Multiplicity | Touch/Cross |
|------|--------------|-------------|
| -4 | 1 | Cross |
| 2 | 1 | Cross |

$$\lim_{x \rightarrow -\infty} f(x) = \infty$$

$$\lim_{x \rightarrow \infty} f(x) = \infty$$

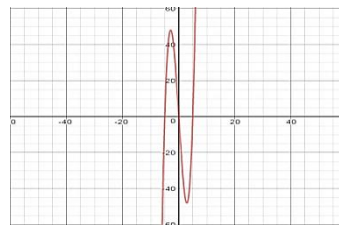


17.

| Zero | Multiplicity | Touch/Cross |
|------|--------------|-------------|
| 0 | 1 | Cross |
| -5 | 1 | Cross |
| 5 | 1 | Cross |

$$\lim_{x \rightarrow -\infty} f(x) = \infty$$

$$\lim_{x \rightarrow \infty} f(x) = \infty$$



19. $f(x) = (x + 6)^2(x + 3)^2(x - 1)$

21. D

23. C

25. E