Question 1

The function f defined by:

$$f(x) = 3x^3 + 2x^2 + x + 1$$

would best be described as a:

1. transcendental
2. exponential
3. power

4. rational
5. polynomial
6. None of the above

Question 1

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6. None of the above

f is a polynomial.

Question 2

The function f defined by:

$$f(x) = \sqrt[3]{x^2}$$

would best be described as a:

1. transcendental
2. exponential
3. power

4. rational
5. polynomial
6. None of the above

Question 2

The function f defined by:

$$f(x) = \sqrt[3]{x^2}$$

would best be described as a:

1. transcendental
2. exponential
3. power

4. rational
5. polynomial
6. None of the above

f is a power function. It can also be written using a fractional exponent. $f(x) = x^{\frac{2}{3}}$

Question 3

The function f defined by:

$$f(x) = \tan^{-1} x$$

would best be described as a:

1. transcendental
2. exponential
3. power
4. rational
5. polynomial
6. None of the above

Question 3

The function f defined by:

$$f(x) = \tan^{-1} x$$

would best be described as a:

1. transcendental
2. exponential
3. power

4. rational
5. polynomial
6. None of the above

f is a transcendental function

Question 4

The difference quotient

$$\frac{f(x+h) - f(x)}{h}$$

of the function $f(x) = 3x + 2$ is:

1. 2+h
2. 2
3. 3

4. 3h+2
5. -3
6. None of the above

Question 4

The difference quotient

$$\frac{f(x+h) - f(x)}{h}$$

of the function $f(x) = 3x + 2$ is:

1. 2+h
2. 2
3. 3

4. 3h+2
5. -3
6. None of the above

The difference quotient is 3

Question 5

The difference quotient

$$\frac{f(x+h) - f(x)}{h}$$

of the function $f(x) = -5x - 3$ is:

1. 5+h
2. -5
3. -3

4. 5h+3
5. 3
6. None of the above

Question 5

The difference quotient

$$\frac{f(x+h) - f(x)}{h}$$

of the function $f(x) = -5x - 3$ is:

1. 5+h
2. -5
3. -3

4. 5h+3
5. 3
6. None of the above

The difference quotient is -5

Question 6

The difference quotient

$$\frac{f(x+h) - f(x)}{h}$$

of the function $f(x) = -x + t$ is:

1. 1+t
2. t
3. h

4. -1
5. -h+t
6. None of the above

Question 6

The difference quotient

$$\frac{f(x+h) - f(x)}{h}$$

of the function $f(x) = -x + t$ is:

1. 1+t
2. t
3. h

4. -1
5. -h+t
6. None of the above

The difference quotient is -1. We don't need to know the value of t.