

Practice Test for Mathematics

Qatar Secondary School Certificate

Answer Key

1	A
2	B
3	B
4	B
5	D
6	B
7	C
8	A
9	B
10	D
11	C
12	C
13	B
14	C
15	D
16	C
17	B
18	A
19	A
20	D
21	D

Answer to question 22:

$$Q = 2,000 \cdot 1.04^x$$

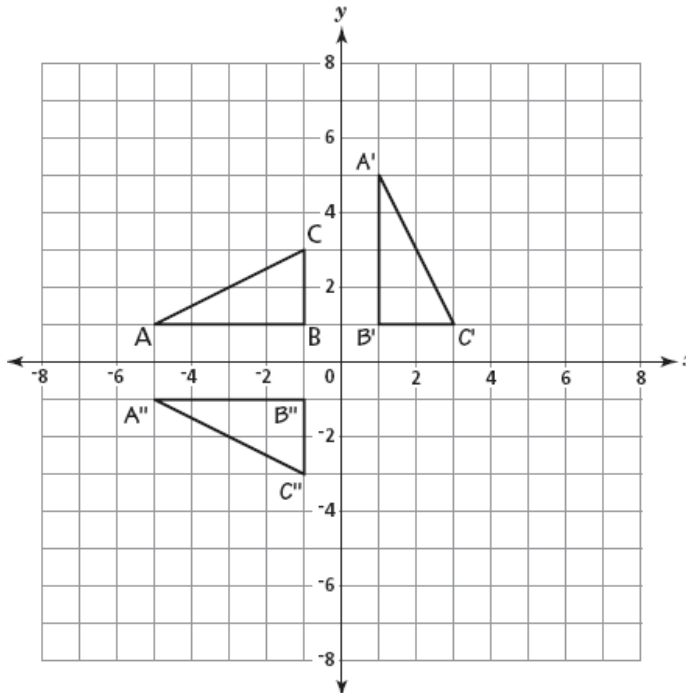
AND

$$Q = 2,000 \cdot 1.04^x$$

$$Q = 2,000 \cdot 1.04^5$$

$$Q = 2,433$$

Answer to question 23:



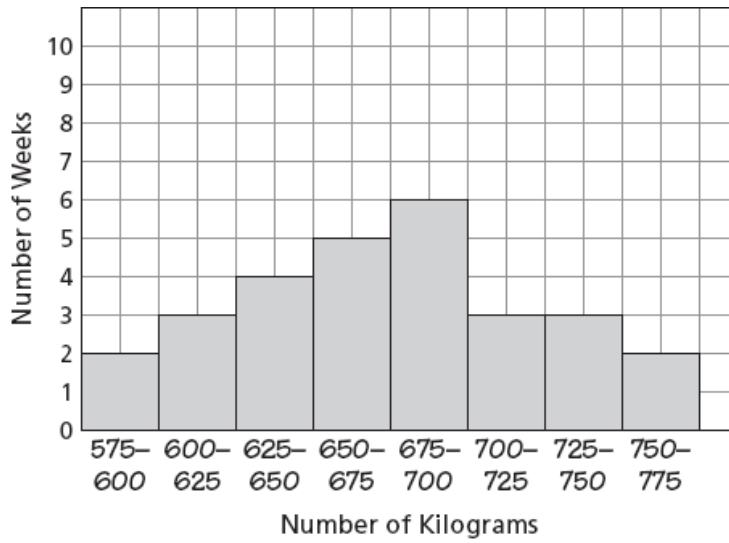
Answer to question 24:

$$\begin{aligned} f(g(x)) &= f(2x + 1) \\ &= (2x + 1)^3 - 2 \\ &= (2x + 1)(2x + 1)(2x + 1) - 2 \\ &= (2x + 1)(4x^2 + 4x + 1) - 2 \\ &= (8x^3 + 12x^2 + 6x + 1) - 2 \\ &= 8x^3 + 12x^2 + 6x - 1 \end{aligned}$$

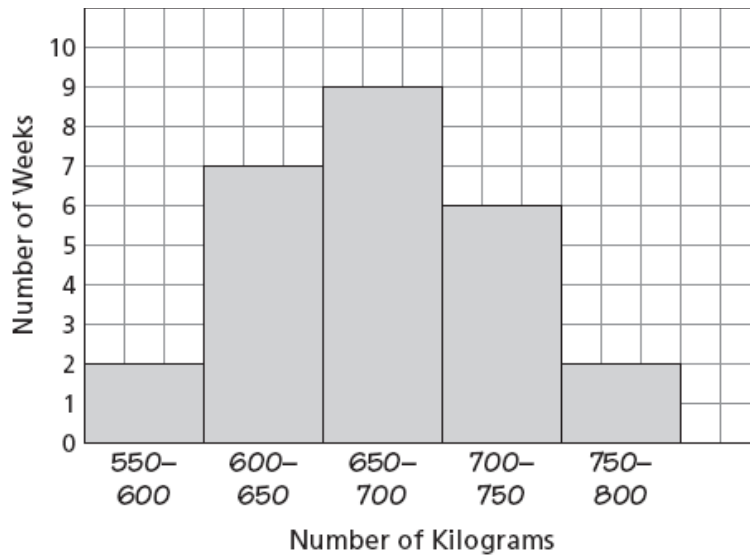
AND

$$\begin{aligned} g(f(x)) &= g(x^3 - 2) \\ &= 2(x^3 - 2) + 1 \\ &= 2x^3 - 4 + 1 \\ &= 2x^3 - 3 \end{aligned}$$

Answer to question 25:



OR



Answer to question 26:

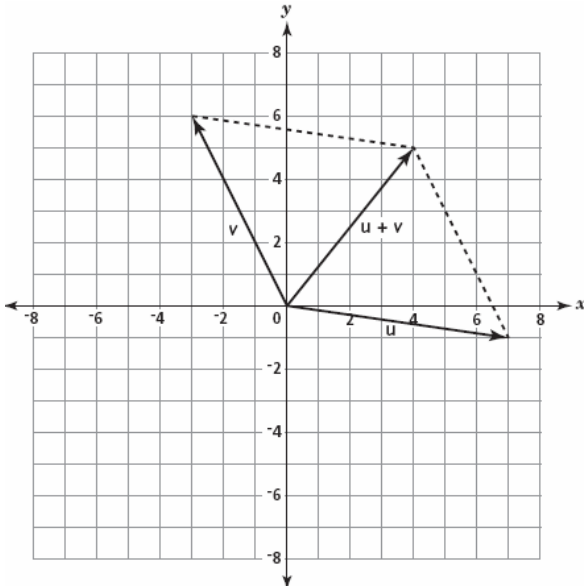
(0, -1)

AND

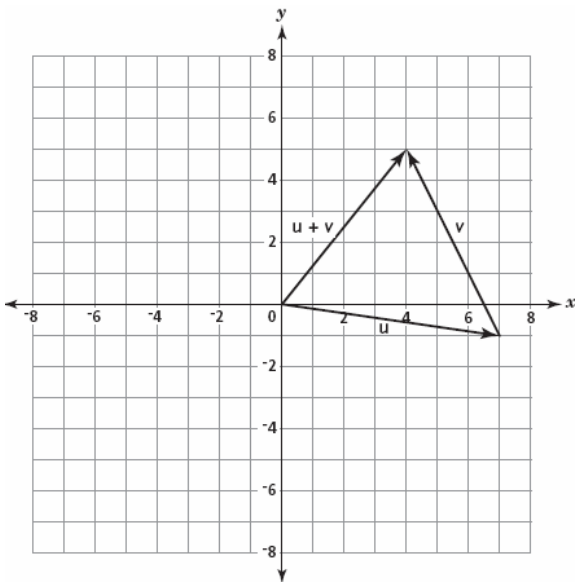
Any two of the following:

- $f(x)$ goes up and to the right while $h(x)$ goes up and to the left
- $h(x)$ has been stretched by a factor of 2 (OR $h(x)$ is twice as steep as $f(x)$)
- $h(x)$ is shifted down from $f(x)$

Answer to question 27:



OR



Answer to question 28:

$$1,210 \div 1,000 = 1.21$$

$$\sqrt{1.21} = 1.1$$

$$P_{n+1} = 1.1 \bullet P$$

AND

$$P_{2012} = 1.1 \bullet P_{2011}$$

$$= 1.1 \bullet 1,210$$

$$= 1,331$$

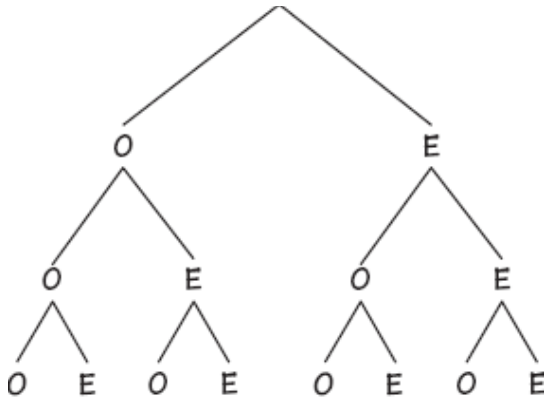
$$P_{2013} = 1.1 \bullet P_{2012}$$

$$= 1.1 \bullet 1,331$$

$$= 1,464.1$$

$$= 1,464$$

Answer to question 29:



AND

$$\frac{3}{8}$$

Answer to question 30:

$$y = \frac{-1}{3}x + 2$$

AND

