

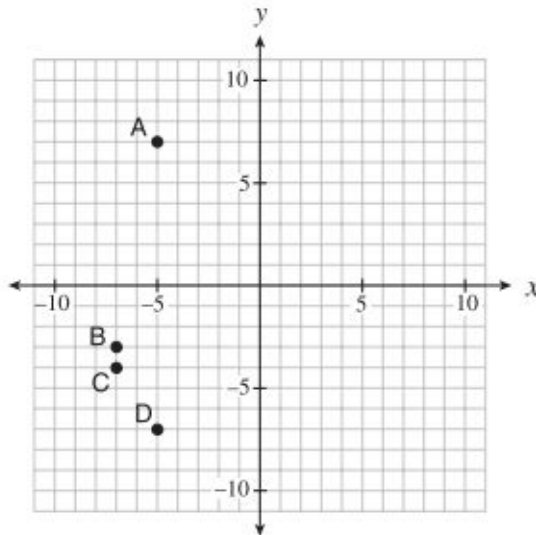
Name: _____

Math 10 Review

What You Should Already Know

1.

Use the following graph to answer question 1.



1. The line $y - 2 = \frac{1}{2}(x - 5)$ passes through which point on the graph?

- A. A
- B. B
- C. C
- D. D

2.

Solve the following system of equations:

$$4x + 2y = 8$$

$$-3x + y = -1$$

- A. $(-3, 10)$
- B. $(-1, 6)$
- C. $(1, 2)$
- D. $(3, 2)$

3.

What is the greatest common factor of 12, 24, 30, 72?

- A. 360
- B. 12
- C. 6
- D. 2

4.

Express $2\sqrt{5}$ as an entire radical.

- A. $\sqrt{10}$
- B. $\sqrt{20}$
- C. $\sqrt{50}$
- D. $\sqrt{100}$

5.

Simplify: $(2x^3)^3 \cdot 3x^4$

- A. $24x^{36}$
- B. $24x^{13}$
- C. $18x^{36}$
- D. $6x^{13}$

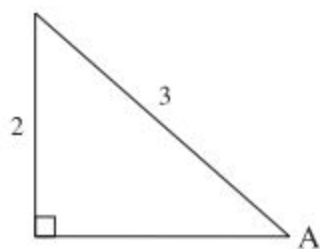
6.

A road sign says to turn right in 1000 feet. Approximately how far is this distance in kilometres?

- A. 0.3 km
- B. 0.6 km
- C. 1 km
- D. 1.5 km

7.

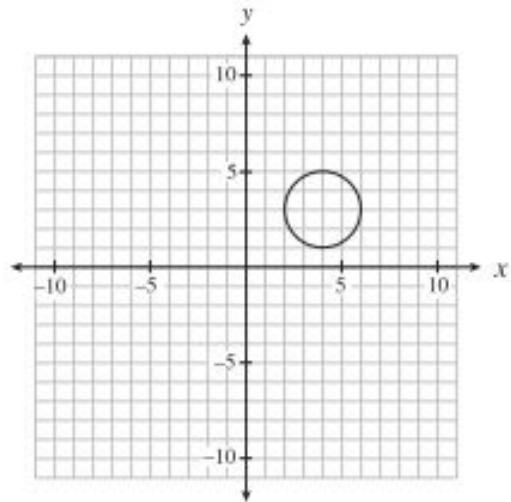
Determine the ratio of $\cos A$.



- A. $\cos A = \frac{2}{3}$
- B. $\cos A = \frac{\sqrt{5}}{3}$
- C. $\cos A = \frac{\sqrt{13}}{3}$
- D. $\cos A = \frac{3}{\sqrt{5}}$

PART B – CALCULATOR SECTION
8.

What is the range of the graph below?

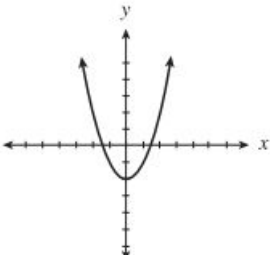


I.	All x values between 2 and 6 inclusive.
II.	$(2, 6)$
III.	$[1, 5]$
IV.	$1 \leq y \leq 5$

- A. III only
- B. IV only
- C. I and II only
- D. III and IV only

9.

Which of the following relations are also functions?

I.	$\{(0, 2), (1, 4), (3, 6), (4, 5), (4, 3), (7, -8)\}$
II.	$y = 2x + 5$
III.	The output is 6 more than half the input.
IV.	

- A. I only
- B. I and IV only
- C. II and III only
- D. II, III and IV only

10.

A line has a slope of $\frac{2}{3}$ and passes through the point $(6, 0)$. Which of the following points must also be on the line?

- A. $(-3, -6)$
- B. $(3, 8)$
- C. $(4, -3)$
- D. $(9, 3)$

11.

Damien has a list of 37 potential customers for his house-painting business. In order to get a business grant, he must graph his income versus the number of customers. Determine the domain of the graph.

- A. $\{0, 1, 2, 3, \dots\}$
- B. $\{0, 1, 2, 3, \dots, 37\}$
- C. all real numbers
- D. all real numbers between 0 and 37

12.

Rewrite $y = \frac{x}{5} - 6$ in general form.

A. $\frac{x}{5} - y - 6 = 0$

B. $x + 5y - 6 = 0$

C. $x - 5y - 30 = 0$

D. $5x - 5y - 30 = 0$

13.

Which of the following lines have a negative slope?

I.	$y + 3 = 0$
II.	$2x + y = 6$
III.	$(y + 2) = -4(x - 5)$

A. II only

B. III only

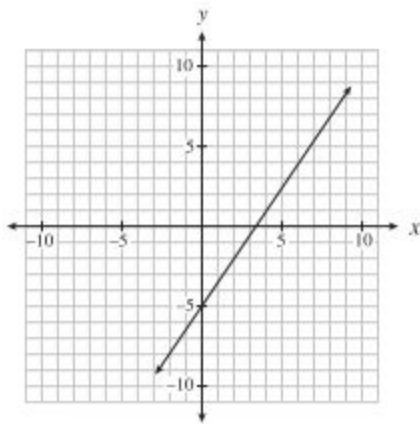
C. I and III only

D. II and III only

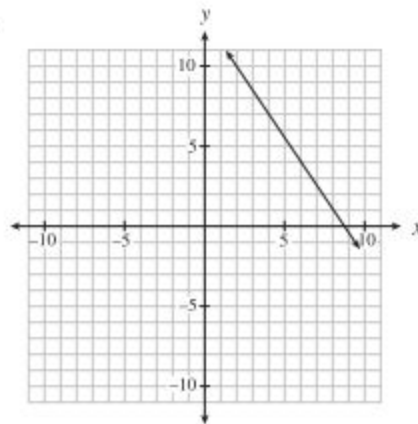
14.

Which of the following graphs represents a line that passes through $(6, 4)$ and is perpendicular to $y = -\frac{2}{3}x$?

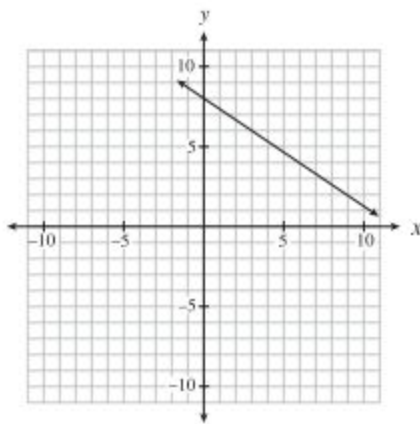
A.



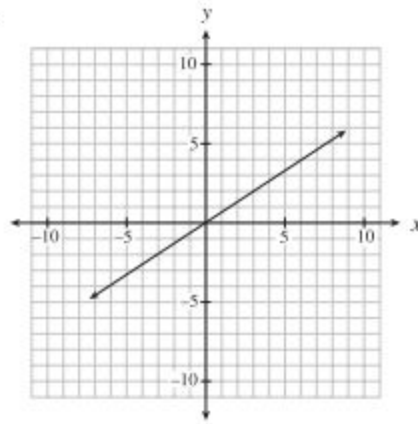
B.



C.



D.



15.

Joey bought 8 books. Some books cost \$12 each the rest cost \$18 each. He spent a total of \$108. Which of the following systems of linear equations could represent the given situation?

- A. $x + y = 8$
 $12x + 18y = 108$
- B. $x + y = 108$
 $12x + 18y = 8$
- C. $x + 12y = 8$
 $x + 18y = 108$
- D. $12x + y = 8$
 $x + 18y = 108$

16.

Kim invested a total of \$1500 between two bonds. One bond earned 8% per annum and the other bond earned 10% per annum. In one year, Kim earned \$132 on her investments. How much did she invest in the bond that earned 10%?

- A. \$600
- B. \$750
- C. \$900
- D. \$1000

17.

Which one of the following sets of numbers contains only rational numbers?

- A. $\left\{-\frac{3}{4}, 7.1, \sqrt{16}\right\}$
- B. $\left\{\frac{1}{2}, -6, \frac{\sqrt{5}}{2}\right\}$
- C. $\{-3, 4.\overline{23}, 4.121314\dots\}$
- D. $\{\sqrt{10}, 3\sqrt{9}, \pi\}$

18.

Simplify: $(3a^2)^3(4a^3)^0$

- A. $9a^6$
- B. $27a^6$
- C. $36a^8$
- D. $108a^9$

19.

Which expression is equivalent to $(-c^2)^{-\frac{1}{3}}$?

A. $\frac{1}{\sqrt[3]{-c^2}}$

B. $\frac{1}{\sqrt[3]{c^2}}$

C. $\frac{1}{\sqrt{-c^3}}$

D. $\sqrt[3]{c^2}$

20.

Simplify: $\sqrt{x^3} \div \sqrt[3]{x^4}$

A. $\sqrt[6]{x}$

B. $\sqrt[8]{x^9}$

C. $\sqrt[9]{x^8}$

D. $\sqrt[12]{x}$

21.

Pam expanded and simplified $(x - 3)(x^2 + 2x - 4)$, as shown below.

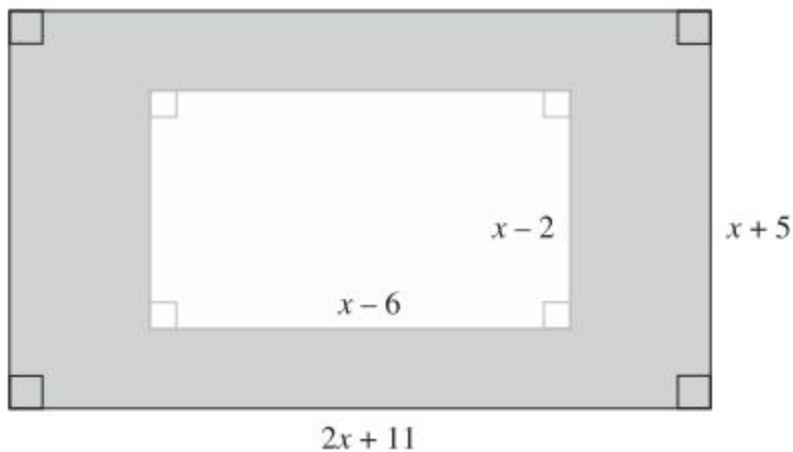
Steps	
I.	$x(x^2 + 2x - 4) - 3(x^2 + 2x - 4)$
II.	$x^3 + 2x^2 - 4x - 3x^2 + 6x - 12$
III.	$x^3 - x^2 + 2x - 12$

In which step is Pam's first error?

- A. Step I
- B. Step II
- C. Step III
- D. There is no mistake.

22.

Determine an expression to represent the shaded area below.



- A. $x^2 + 43$
- B. $x^2 + 13x + 67$
- C. $x^2 + 29x + 43$
- D. $3x^2 + 13x + 67$

23.

Which of the following expressions is a factor of $x^2 - 8x - 20$?

- A. $x - 2$
- B. $x - 4$
- C. $x - 5$
- D. $x - 10$

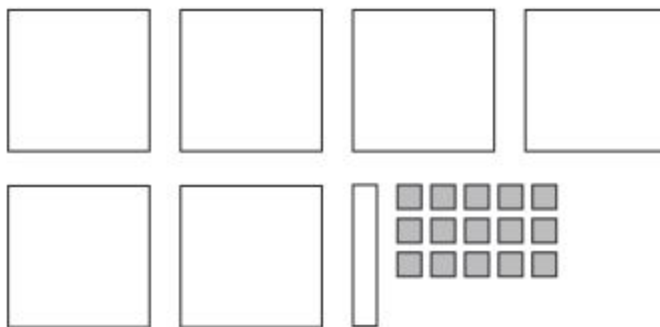
24.

When completely factored, how many factors does $2x^4 - 24x^2 - 128$ have?

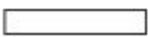



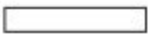



- A. 2
- B. 3
- C. 4
- D. 5

25.

Joe was asked to factor $6x^2 + x - 15$ and represent it with math tiles.



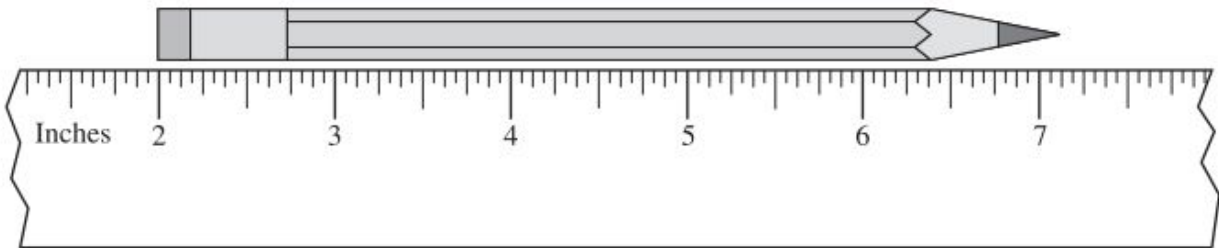
What additional tiles would he need to represent the total area of the two factors?

- A. 8 each of  and 
- B. 9 each of  and 
- C. 10 each of  and 
- D. 11 each of  and 

26.

48

45. Using the ruler below, determine the length of the pencil.



- A. $5\frac{1}{8}$ "
- B. 5.2"
- C. $5\frac{1}{4}$ "
- D. $7\frac{1}{8}$ "

27.

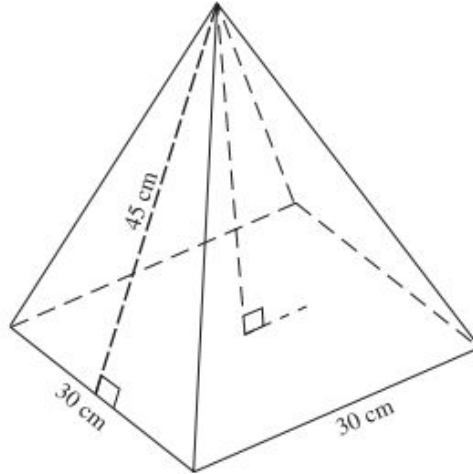
Which distance below is the longest?

0.6 mi, 1000 yd, 1 km, 900 m

- A. 0.6 mi
- B. 1000 yd
- C. 1 km
- D. 900 m

28.

The slant height of the pyramid below is 45 cm. Calculate its volume.



- A. $10\,062\text{ cm}^3$
- B. $12\,728\text{ cm}^3$
- C. $13\,500\text{ cm}^3$
- D. $40\,500\text{ cm}^3$

29.

A cylinder with a diameter of 10 cm and a height of 12 cm is half full of water. A sphere with a diameter of 5 cm is dropped into the cylinder. How far will the water level rise once the sphere is completely under the water?

- A. 0.57 cm
- B. 0.83 cm
- C. 5 cm
- D. 6 cm

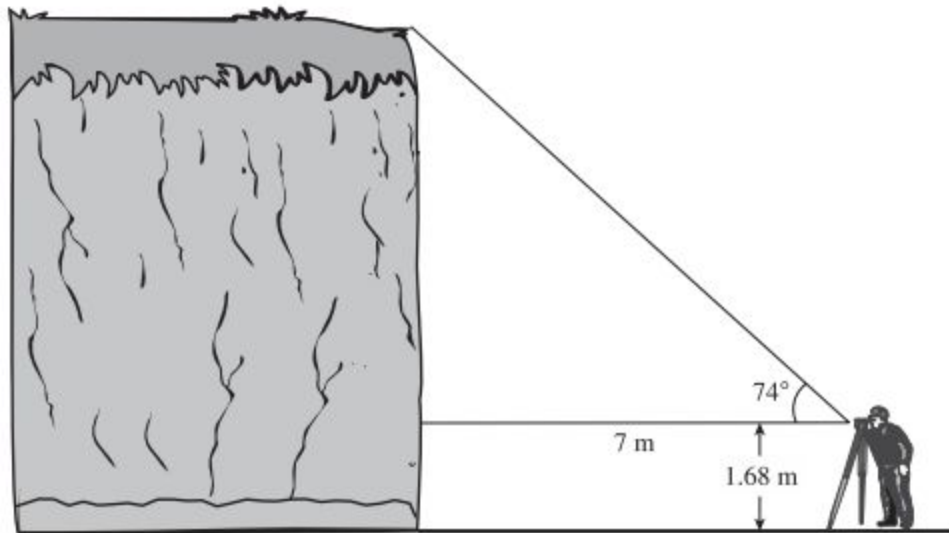
30.

The angle of elevation of the sun is 15° . How long is the shadow of a 64 m tall building?

- A. 17 m
- B. 66 m
- C. 239 m
- D. 247 m

31.

Mission's outdoor club collected the following data to determine the height of a cliff.



Calculate the height of the cliff.

- A. 3.7 m
- B. 8.4 m
- C. 24.4 m
- D. 26.1 m