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GOOD LUCK!

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For grading use:

Number Correct	
	(out of 20 problems)

Total	
	(out of 100 points)

Name: _____

Multiple Choice Questions

*Show all your work on the page where the question appears.
Clearly mark your answer both on the cover page on this exam
and in the corresponding questions that follow.*

1. Simplify the expression. $14 - 4 \cdot 8^2$

Possibilities:

- (a) -1010
 - (b) -50
 - (c) 6400
 - (d) -242
 - (e) 270
-

2. Simplify the expression without using a calculator. Your answer should not have any radicals in it.

$$\sqrt{12}\sqrt{75}$$

Possibilities:

- (a) 30
 - (b) 87
 - (c) 90
 - (d) 900
 - (e) 10
-

3. What is the first operation applied to x in the following expression? $6 - (x + 3)^8$

Possibilities:

- (a) Take the 8th root
 - (b) Subtract it from 6
 - (c) Multiply by -1
 - (d) Raise it to the 8th power
 - (e) Add 3
-

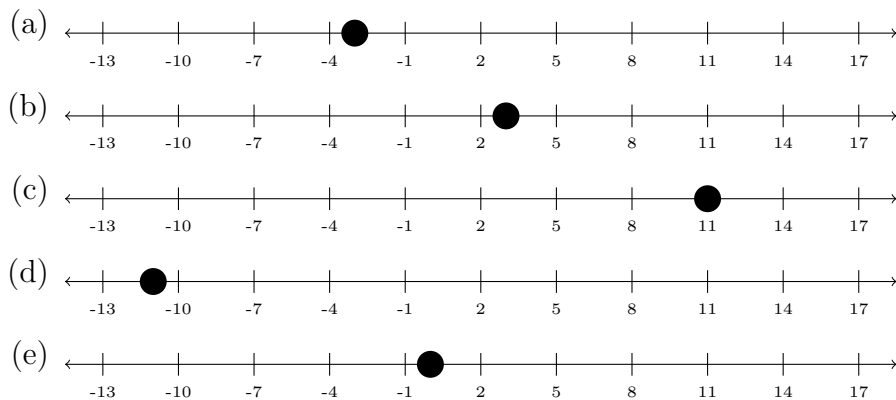
4. Simplify, and write the given number without using absolute values. $1 - |3 - 8|$

Possibilities:

- (a) 12
- (b) 6
- (c) -4
- (d) 4
- (e) -10

5. Find the given number on the number line: $4 - |-7|$

Possibilities:



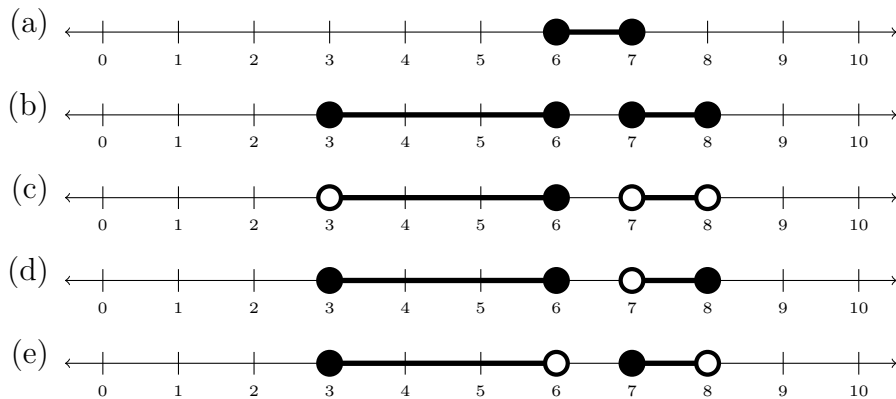
6. Simplify, and write the given number without using absolute values. $|\sqrt{7} - 3|$

Possibilities:

- (a) 2
- (b) $3 + \sqrt{7}$
- (c) $\sqrt{7} - 3$
- (d) $-3 - \sqrt{7}$
- (e) $3 - \sqrt{7}$

7. Which of the following number lines represents the union of intervals $[3, 6) \cup [7, 8)$?

Possibilities:



8. Solve the equation for L. $A = b \cdot \frac{L + R}{2}$

Possibilities:

- (a) $L = \frac{2bA - Rb}{2}$
- (b) $L = \frac{2A}{b} - R$
- (c) $L = \frac{A + 2Rb}{b}$
- (d) $L = \frac{2A - Rb}{Rb}$
- (e) $L = \frac{2A + b}{Rb}$

9. Find the x -intercept(s) of the graph of $x^2 + xy + y^2 + 10y - 2 = 0$.

Possibilities:

- (a) $(\pm\sqrt{2}, -5 \pm \sqrt{2})$
- (b) $(0, \pm\sqrt{2})$
- (c) $(\pm\sqrt{2}, 0)$
- (d) $(0, -5 \pm \sqrt{2})$
- (e) $(-5 \pm \sqrt{2}, 0)$
-

10. Solve for x in $5 + |2 - x| = 7$.

Possibilities:

- (a) 10 and 0
- (b) 0 and 4
- (c) 4 only
- (d) 0 only
- (e) 10 only

11. The point $(6, 3)$ is on the graph of which of the following equations?

Possibilities:

- (a) $x^2 + x - 9 = -y^2 + 42$
- (b) $-xy + 36 = -xy + 9$
- (c) $x^2 - 18 = y^2 - 18$
- (d) $xy = 3y$
- (e) $x = y - 3$

12. The graph of $x^2 + y^2 - 18x - 10y + 97 = 0$ is a circle. Find its center and its radius.

Possibilities:

- (a) Radius: 6 Center: $(18, 10)$
- (b) Radius: 3 Center: $(-9, -5)$
- (c) Radius: 3 Center: $(9, 5)$
- (d) Radius: $\sqrt{97}$ Center: $(-9, -5)$
- (e) Radius: $\sqrt{97}$ Center: $(9, 5)$

13. Find an equation for the circle shown below:

Possibilities:

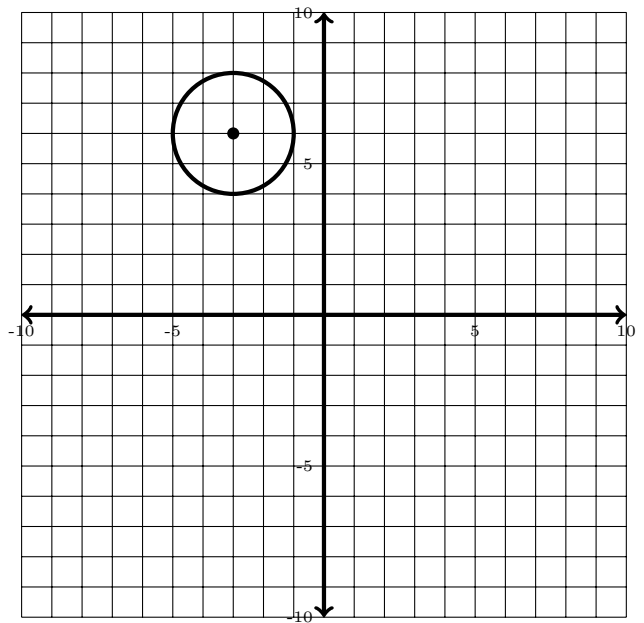
(a) $(x + 3)^2 + (y + 6)^2 = 2$

(b) $(x + 6)^2 + (y + 12)^2 = -4$

(c) $(x - 3)^2 + (y - 6)^2 = 2$

(d) $(x + 3)^2 + (y - 6)^2 = 4$

(e) $(x - 3)^2 + (y + 6)^2 = 4$



14. Find all distinct, real solutions x to $\sqrt{10x + 2} = x - 4$

Possibilities:

(a) $9 + \sqrt{67}$ and $9 - \sqrt{67}$

(b) $9 + \sqrt{67}$ only

(c) 3 and $\sqrt{65}$

(d) 4 and $-\frac{1}{5}$

(e) $9 - \sqrt{67}$ only

15. Find an equation for the line through the points $(6, 3)$ and $(8, 7)$.

Possibilities:

(a) $y - 3 = 2(x - 6)$

(b) $y - 3 = \frac{1}{2}(x - 6)$

(c) $y + 3 = \frac{1}{2}(x + 6)$

(d) $y = -\frac{1}{2}(x - 6) - 3$

(e) $y + 3 = 2(x + 6)$

16. Rewrite the expression $x^2 - 6x + 3$ by completing the square.

Possibilities:

(a) $(x + 6)^2 - 3$

(b) $(x - 6)^2 + 3$

(c) $(x + 3)^2 + 6$

(d) $(x - 3)^2 - 6$

(e) $(x + 3)^2 - 3$

17. Find all distinct, real solutions x to $(x^2 - 5)(x - 2)(x - 7) = 0$.

Possibilities:

(a) $x = \pm\sqrt{5}$, $x = -2$, and $x = -7$

(b) $x = \pm\sqrt{5}$, $x = 2$, and $x = 7$

(c) $x = 5$, $x = 2$, and $x = 7$

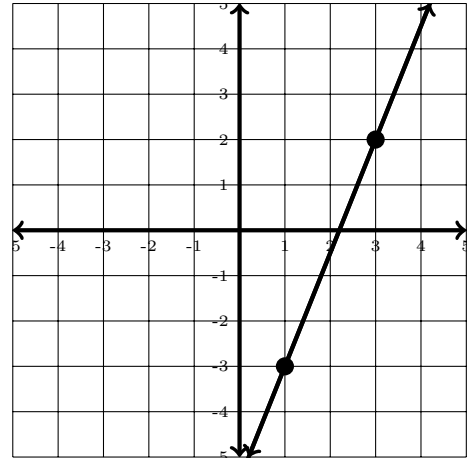
(d) $x = -5$, $x = -2$, and $x = -7$

(e) No solution

18. Find the slope of the line in the graph.

Possibilities:

- (a) $-\frac{2}{5}$
- (b) $-\frac{5}{2}$
- (c) $\frac{2}{5}$
- (d) $\frac{5}{2}$
- (e) The slope is not defined.



19. Find all distinct, real solutions x to $x^6 - 7x^3 + 10 = 0$

Possibilities:

- (a) $x = 2$ only
- (b) $x = 5$ and $x = 2$
- (c) $x = \sqrt[3]{5}$ and $x = \sqrt[3]{2}$
- (d) $x = 5^3$ and $x = 2^3$
- (e) $x = 5$ only

20. What is the distance between $(5, 2)$ and $(-7, -6)$?

Possibilities:

- (a) $2\sqrt{5}$
- (b) $\sqrt{10}$
- (c) 12
- (d) 8
- (e) $4\sqrt{13}$

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6. a b c d e

7. a b c d e

8. a b c d e

9. a b c d e

10. a b c d e

11. a b c d e

12. a b c d e

13. a b c d e

14. a b c d e

15. a b c d e

16. a b c d e

17. a b c d e

18. a b c d e

19. a b c d e

20. a b c d e

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